NORTH WESTERN PROVINCE / ASIAN DEVELOPMENT BANK ASSISTED WATER RESOURCES DEVELOPMENT PROJECT

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Completion Report

on

Water Quality Monitoring Programme 1998

Prepared

By

NATURAL RESOURCES MANAGEMENT DIVISION
CENTRAL ENVIRONMENTAL AUTHORITY
Maligawatte New Town
Colombo 10
Sri Lanka.

CONTENT

1. Introduction

North Western Province Water Resources Development Project was initiated in 1992 with the objective of making efficient use of the land, water and labour resources presently available in the province through the provision of infrastructure, agricultural support facilities and institutional support.

The CEA was assigned to carry out environmental monitoring focusing on the quality of ground water and surface water under this project. The water quality monitoring programme commenced in 1994 by CEA. Samples collected from surface and ground water resources in the province, were analysed by the CEA laboratory for physico-chemical parameters. In addition Ground water was tested for bacteriological quality and pesticides with the assistance of Ceylon Institute of Scientific and Industrial Research.

2. Surface and Ground Water Monitoring for Physico-Chemical Parameters

The surface water (eg: rivers and tanks) and ground water (Agro wells and Domestic wells),were analysed for following parameters.

i. pH

ii. Electrical Conductivity

iii. Turbidity

iv. Dissolved Oxygen (Do)

v. Temperature

vi. Water Level (WL)

vii. Nitrates (NO_3^-)

viii. Nitrites (NO_2^-)

ix. Phosphates (PO_4^{3-})

x. Alkalinity

xi. Total Hardness

xii. Chlorides (CL^-)

Sample Locations and Frequency of Sampling

Ground water samples were obtained from dug wells in all three areas, Kalpitiya, Puttalam, and Kurunegala. The well locations have been marked on the map (Annexure-I). There were 28 sampling wells in Kalpitiya area, 20 sampling wells in Puttalam area, 28 sampling wells in Kurunegala area. The samples were collected once in two months (6 times per year)..

Surface water samples were obtained from rivers and tanks. There were 20 sampling locations and every location was sampled monthly. Sample locations have been given in Annexure I.

3. Results

3.1 Ground Water Quality of NWP

Physical and Chemical properties of ground water in North Western Province were compared against the Sri Lanka standards for Potable water (source SLS 614, 1983). (Annexure -II). Data interpretation was done considering only the most recent data, i.e. data obtained in 1997.

pH
In Kalpitiya area, pH level is within the maximum permissible level but exceeds the maximum desirable level. However in Puttalam and Kurunegala area the pH level is within the maximum desirable level. (Annexure-III).

Nitrates (NO_3^-)
The NO3- level in ground water of all three areas is well below 45 mg/l which is the maximum permissible level for drinking water.(Annexure IV)

Phosphates (PO_4)
Values obtained for phosphates are below 2.0mg/l which is the maximum permissible level for potable water (Annexure V)

Electrical Conductivity (EC)
Electrical Conductivity in ground water of Kalpitiya area is fairly high. According to Sri Lankan standards maximum desirable level, for drinking water is 0.7 mS/cm and maximum permissible level is 3.5 mS/cm. Electrical conductivity level of almost all water samples of Kalpitiya area are higher than this maximum desirable value, and most of the samples are even higher than the maximum permissible value. The level of Total Hardness is also very high in ground water of Kalpitiya area. (Annexure VI)

In Kurunegala area, except for few samples all values are below the maximum permissible level but most values are above the maximum desirable level. (Annexure VI).

In Puttalam area in some samples, Electrical conductivity values are fairly high (higher than the maximum permissible level.) (Annexure VI).

Chlorides (Cl^-)
In Kalpitiya area, the Chloride level of ground water is also considerably high. In Puttalam area also values are very high. In Kurunegala area the Chloride level is reasonably below the maximum desirable limit. (Annexure VII)

3.2 Surface Water Quality of NWP

Physico-chemical parameters of surface water were compared as against the following standards.

1. Proposed Standards for Irrigation and agricultural use.
2. Proposed Standards for a General Minimum Quality Class. (Indicates the suitability of water for various uses i.e. Process water supply for non food industries, Hydropower, Fish survival, Navigation, Controlled waste water disposal etc.)

   (Source: Environmental Quality Standards and Designation of water use in Sri Lanka 1992 by Central Environmental Authority (Annexure VIII).

pH

The observed values of pH of surface water are within the range specified for minimum water quality requirement. i.e. between 5.0-8.5. It is significant that for most of the months pH values are above pH 7. But very high level of pH (9.5-10.0) in Kurunegala Wewa is an exception (Annexure IX).

Nitrates (NO_3^-)

The nitrate levels are well below 5mg/l which is the general minimum water quality requirement (Annexure X).

Phosphates(PO_4^{3-})

In all samples of surface water, the phosphate values observed are below 0.7 mg/l which is the level specified for general minimum water quality (Annexure XI).

Electrical Conductivity (EC)

Except for few months of 1995 and 1997 of Sangappali Wewa and Andara Wewa, the Electrical Conductivity of all other samples are below 0.7mS/cm which is the proposed standard for Electrical Conductivity for irrigation and agricultural uses (Annexure XII).

4. Bacteriological Quality and Pesticide Residue of Ground water of NWP

All three areas Kalpitiya, Puttalam and Kurunegala of North Western Province were tested for Bacteriological Quality and Pesticide Residue. Sampling programme for these parameters was initiated on 10th July 1997, and water sample collection and analysis was done by Ceylon Institute of Scientific and Industrial Research.

From each 3 areas of NWP 10 sample locations were selected on the basis of using these well waters for Irrigation and Domestic purposes. Samples were collected from every sampling location once in three months commencing from July 1997 to January 1998.

Pesticide Residue;

According to CISIR reports, all water samples were tested for 19 pesticides. (Annexure XIII). In all water samples tested dunning above mentioned time period, any pesticide out of, 19 pesticides considered was not detected.

Test method followed for analysis of Pesticides is according to the "Analysis of Pesticides in Water Vol. II & III Alfred S.Y. Chau, B. K Afghan, CRC Press 1977.

Bacteriological Quality

Analysis for Bacteriological Quality was carried out according to the methods described in Sri Lanka Standards Specifications for Potable Water SLS 614; Part II -1983.

Sample locations and results obtained are summarized in tables (Annexure IVX). According to CISIR reports almost all specimen of water tested do not meet the bacteriological requirements as per above mentioned standard. Presence of E.coli in the specimens indicate that water from these sources are contaminated and therefore water from these wells should be properly treated prior to human consumption.

5. Conclusion

Water Quality of Surface Water

The results obtained for the water samples of surface waters (i.e. rivers and tanks of NWP) subjected to tests on the physico-chemical parameters, indicate that they are suitable for irrigation and other agricultural uses.

The comparison of the results on the physico -chemical parameters obtained for the years 1995, 1996, and 1997 did not show any significant variation within the considered time period. Thus it could be concluded that the project activities did not have any significant impact on the surface water quality.

Water Quality of Ground Water

Though the results on the physico -chemical parameters falls within the safe limits of potable water, the results of the bacteriological tests indicate a high occurance of *E. Coli* and thus the ground water (i.e. well water) will have to be treated prior to use as potable water.

The tests also indicate high values on electrical conductivity and Chlorides. This may be due to the geological conditions of those areas.

Annexures

I) Location of Monitoring Sites

II) Sri Lanka Standard; Specification for potable water

III) pH levels of Ground Water Samples in Puttalam, Kalpitiya and Kurunegala areas for 1997.

IV) Nitrate (NO_3^-) levels of Ground Water Samples in Puttalam, Kalpitiya and Kurunegala areas for 1997.

V) Phosphate (PO_4^{3-}) levels of Ground Water Samples in Puttalam, Kalpitiya and Kurunegala areas for 1997.

VI) Electrical conductivity levels of Ground Water Samples in Puttalam, Kalpitiya and Kurunegala areas for 1997.

VII) Chloride levels of Ground Water Samples in Puttalam, Kalpitiya and Kurunegala areas for 1997.

VIII) Proposed standards for surface water

IX) pH levels of Surface Water Samples in North Western Province during 1995 -1997.

X) Nitrate (NO_3^-) levels of Surface Water Samples in North Western Province during 1995 -1997.

XI) Phosphate (PO_4^{3-}) levels of Surface Water Samples in North Western Province during 1995 -1997.

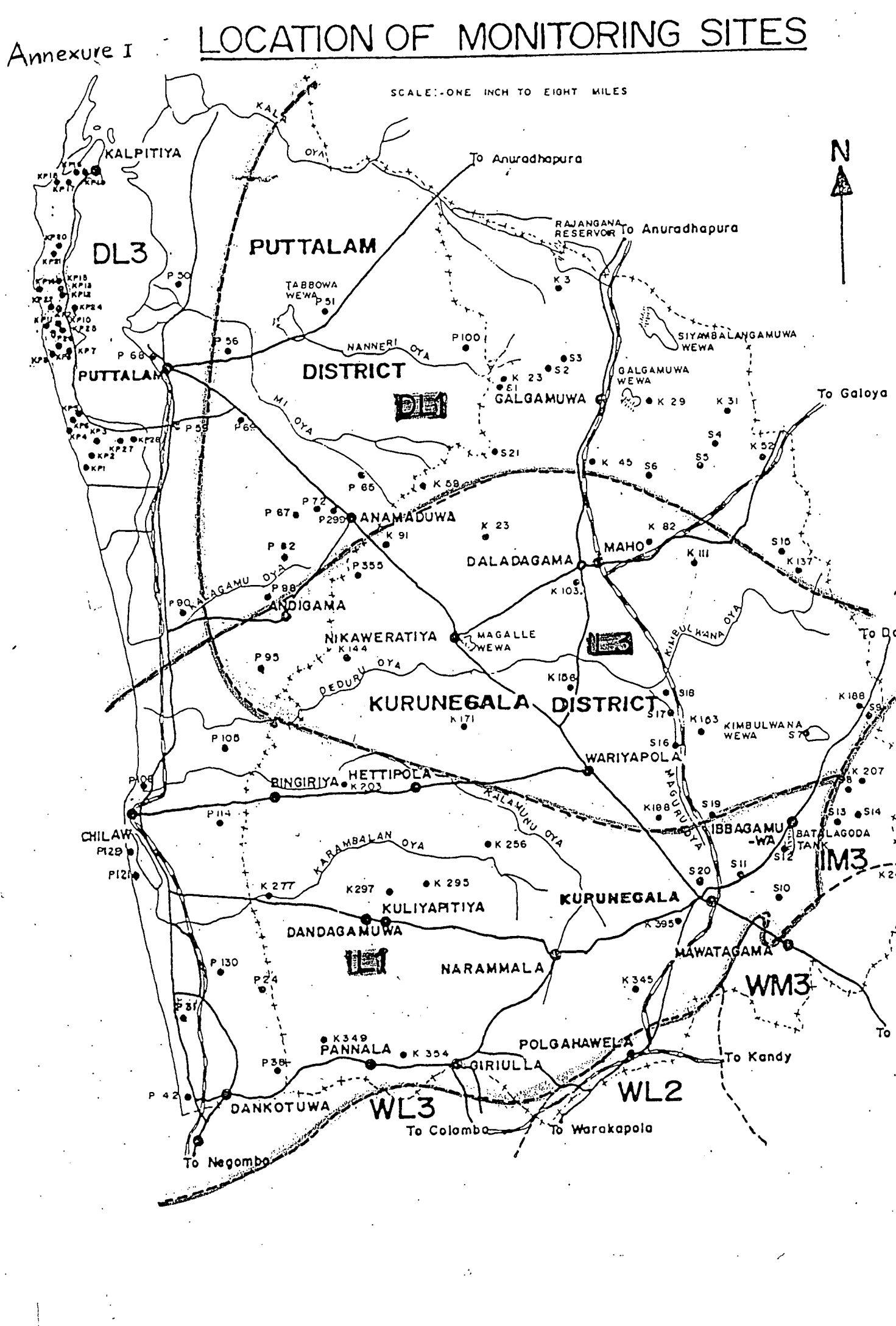
XII) Electrical Conductivity levels of Surface Water in North Western Province during 1995 -1997.

XIII) List of Pesticides

XIV) Analysis of Ground Water for Bacteriological Quality

Annexure I

LOCATION OF MONITORING SITES



Annexure II

6. SRI LANKA STANDARD; SPECIFICATION FOR POTABLE WATER

Source: SLS 614, 1983

6.1 Physical and chemical requirements

Table 6.1 Physical requirements

Characteristic	Maximum desirable level	Maximum permissible level
Colour	5 Units	30 Units
Odour	Unobjectionable	Unobjectionable
Taste	Unobjectionable	Unobjectionable
Turbidity	2 Jackson turbidity units	8 Jackson turbidity units

Table 6.2 Chemical requirements

Substance/characteristic	Max. desirable level	Max. permissible level
pH range	7.0 to 8.5	6.5 to 9.9
Electrical conductivity at 25°C	750 µs/cm	3,500 µs/cm
Chloride (as Cl)	200 mg/l	1,200 mg/l
Free residual chlorine (as chlorine)		0.2 mg/l
Alkalinity (total as $CaCO_3$)	200 mg/l	400 mg/l
Free ammonia		0.06 mg/l
Albuminoid Ammonia		0.15 mg/l
Nitrate (as NO_3)		45 mg/l
Nitrite (as N)		0.01 mg/l
Fluoride (as F)		1.5 mg/l
Total Phosphate (as PO_4)		2.0 mg/l
Total residue	500 mg/l	2000 mg/l
Total hardness (as $CaCO_3$)	250 mg/l	600 mg/l
Total iron (as Fe)	0.3 mg/l	1.0 mg/l
Sulphate (as SO_4)	200 mg/l	400 mg/l

Annexure III

pH levels of Ground Water Samples in
Puttalam, Kalpitiya and Kurunegala areas for 1997.

YEAR 1997

WATER QUALITY MONITORING OF THE DOMESTIC AND AGRO WELLS IN KALPITIYA AREA

Sampling And Testing Carried Out By CEA Laboratory Staff

Parameter pH 97

		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Mahatun	pH	5.82	6.80	5.70	0.00	7.90
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Mervin Bopearachchi	pH	6.63	6.63	7.50	6.6	7.1
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Fishing Camp Mampuri Colony	pH	6.57	6.57	7.70	7.8	8.00
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr A Basil	pH	6.64	6.64	7.80	7.6	7.7
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Rifan	pH	6.98	6.9	8.20		8.4
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

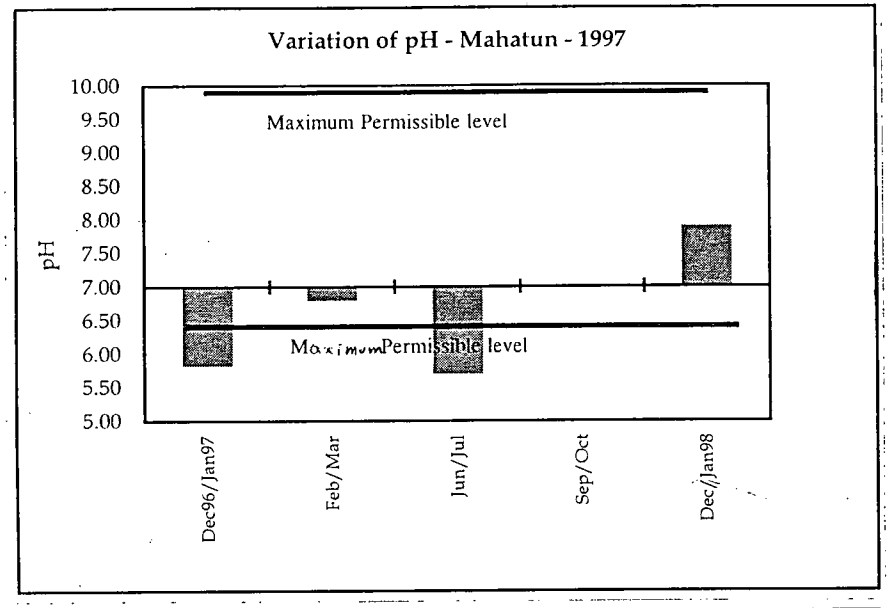
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Nara Water Supply Station	pH	7.40	5.9	8.20	7.0	7.3
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

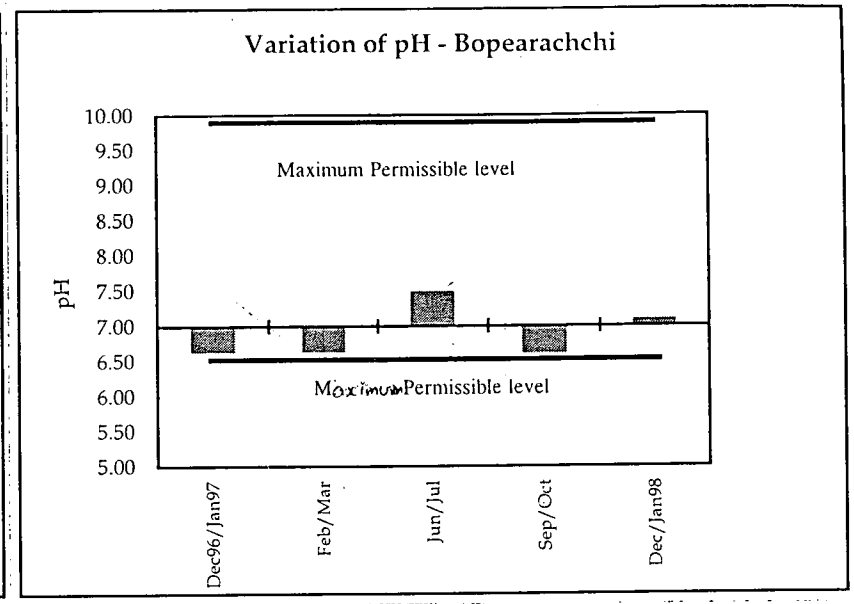
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Etes Appuhamy	pH	8.12	6.2	8.00	7.9	7.6
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

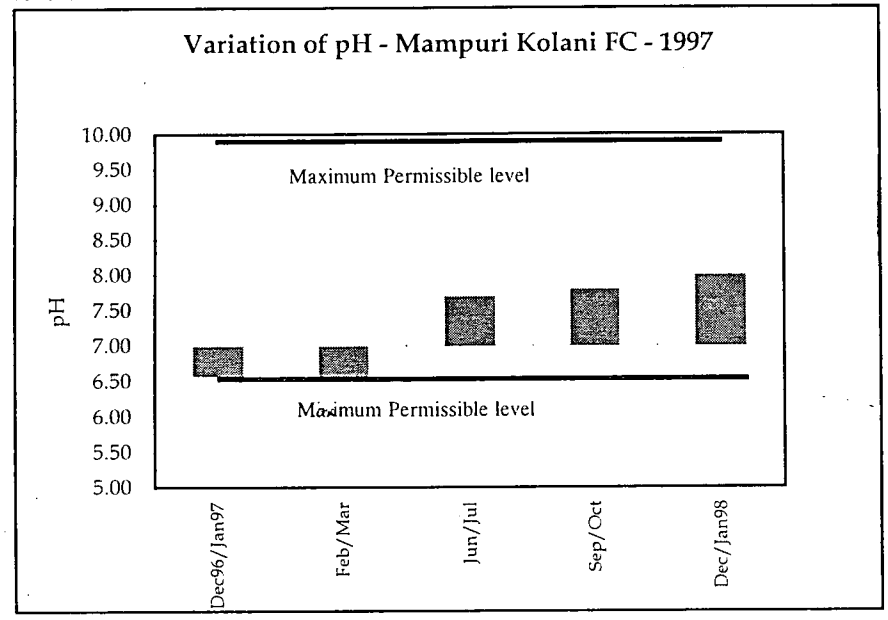
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Anthony Robert	pH	7.64	7.0	8.20	9.0	7.9
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

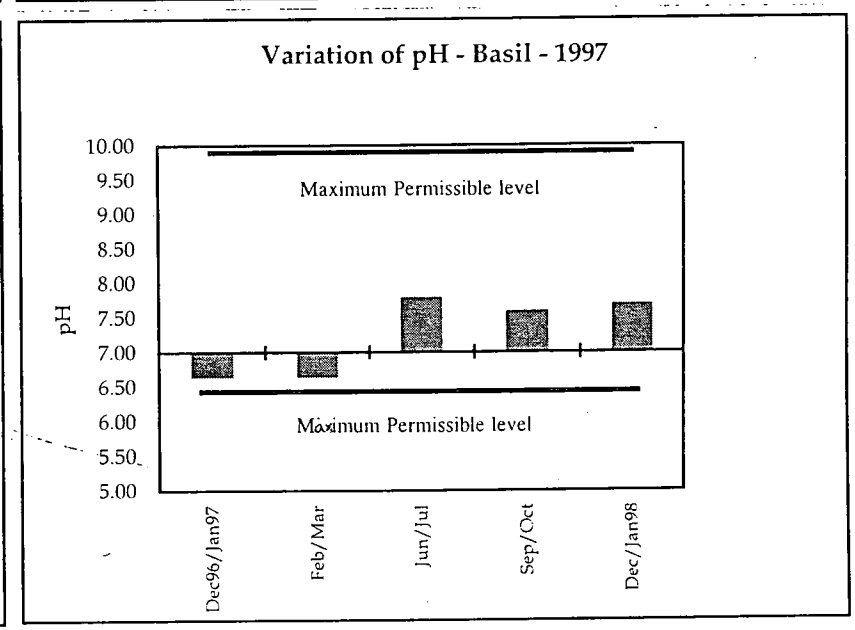
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Milani Fishinmg Camp	pH	7.85	7.1	7.80	8.2	7.6
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

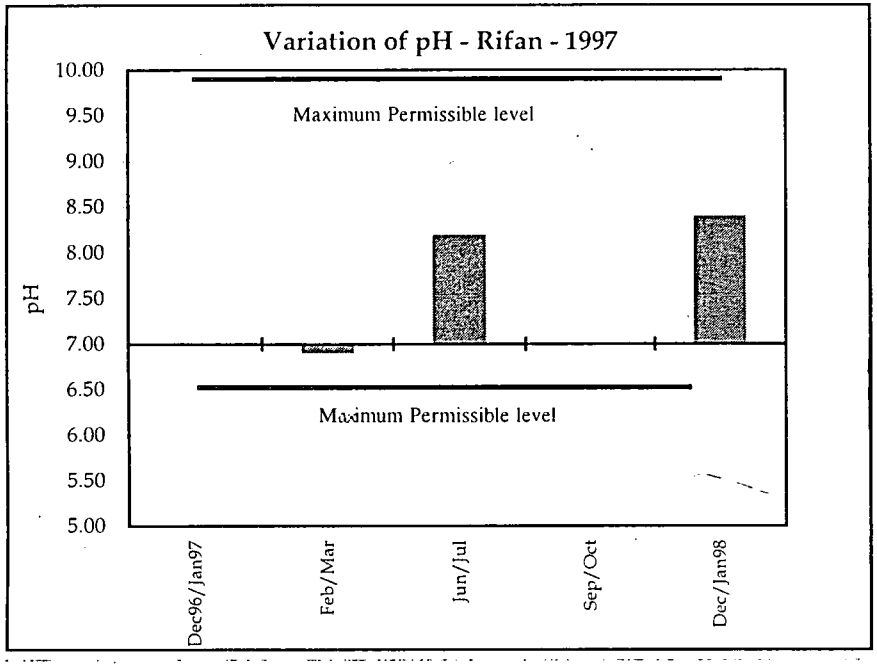
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr A G Jammunulla	pH	7.80	6.8	7.90	8.4	7.8
	Minimum permissible level	6.50	6.50	6.50	6.50	6.50
	Maximum permissible level	9.90	9.90	9.90	9.90	9.90

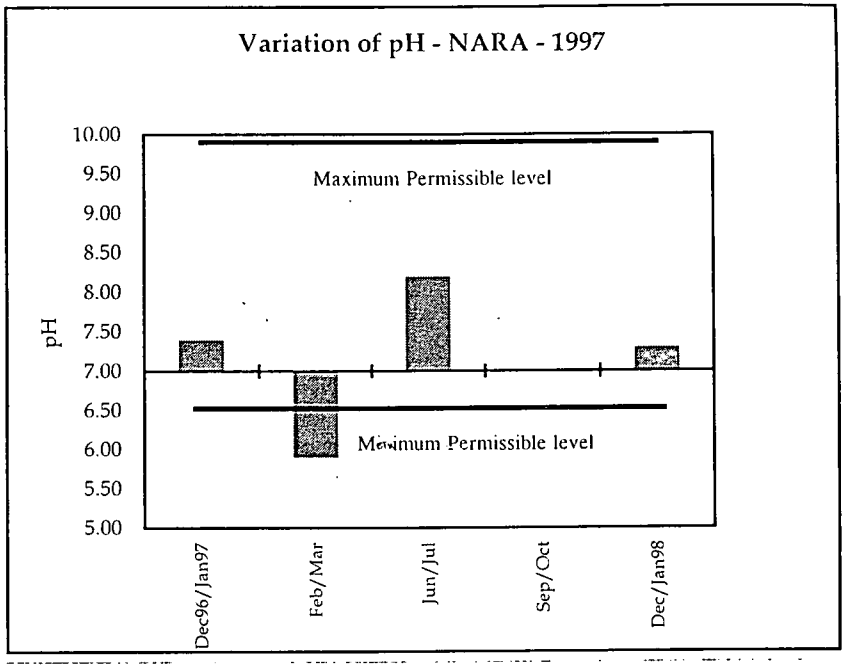

Variation of pH - Mahatun - 1997
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
Jun/Jul
Sep/Oct
Dec/Jan98

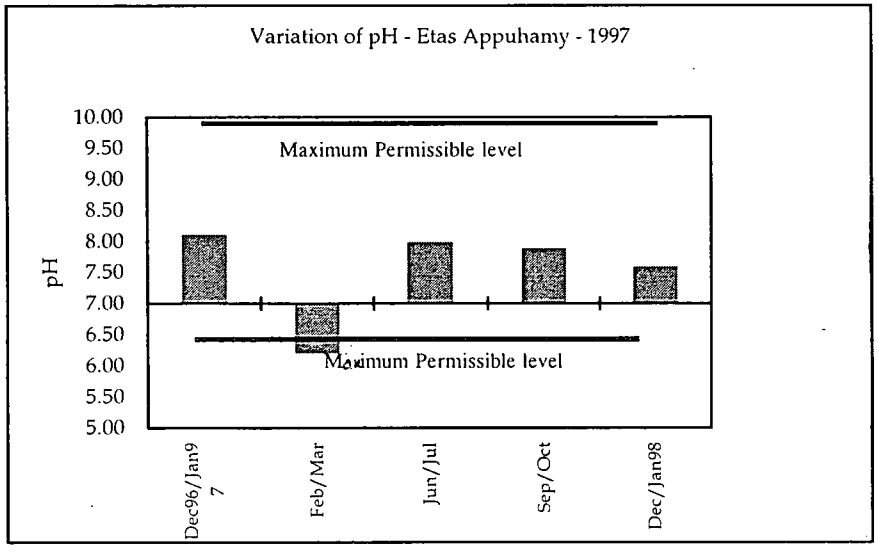

Variation of pH - Bopearachchi
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
Jun/Jul
Sep/Oct
Dec/Jan98

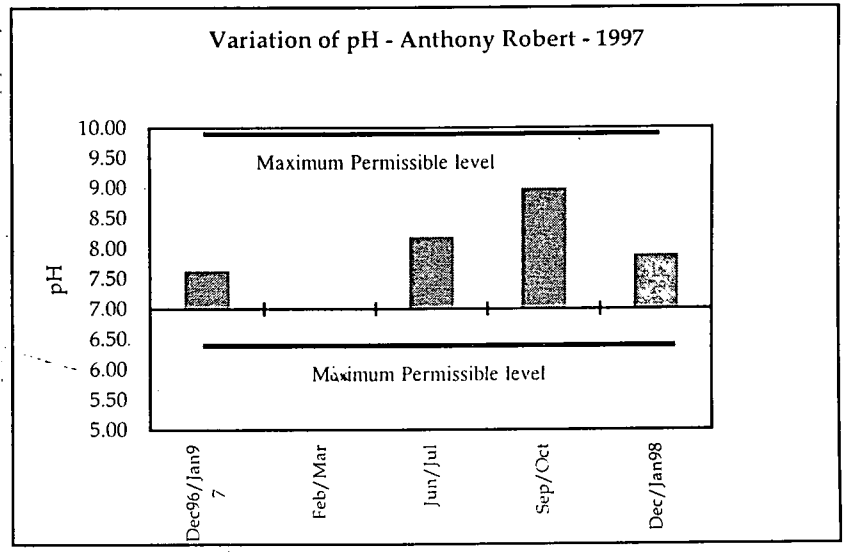

Variation of pH - Mampuri Kolani FC - 1997
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
Jun/Jul
Sep/Oct
Dec/Jan98


Variation of pH - Basil - 1997
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
Jun/Jul
Sep/Oct
Dec/Jan98


Variation of pH - Rifan - 1997
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
Jun/Jul
Sep/Oct
Dec/Jan98


Variation of pH - NARA - 1997
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
Jun/Jul
Sep/Oct
Dec/Jan98


Variation of pH - Etas Appuhamy - 1997
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
Jun/Jul
Sep/Oct
Dec/Jan98


Variation of pH - Anthony Robert - 1997
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
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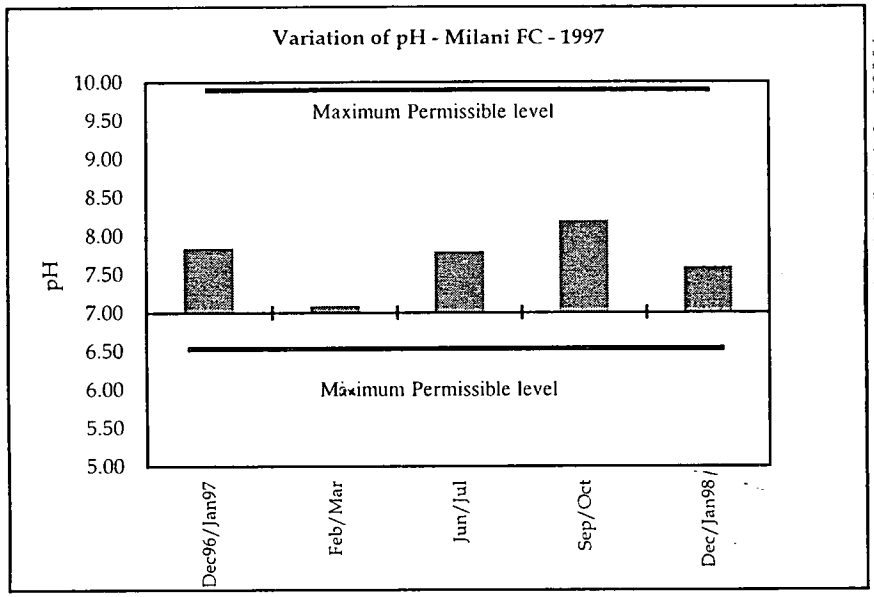
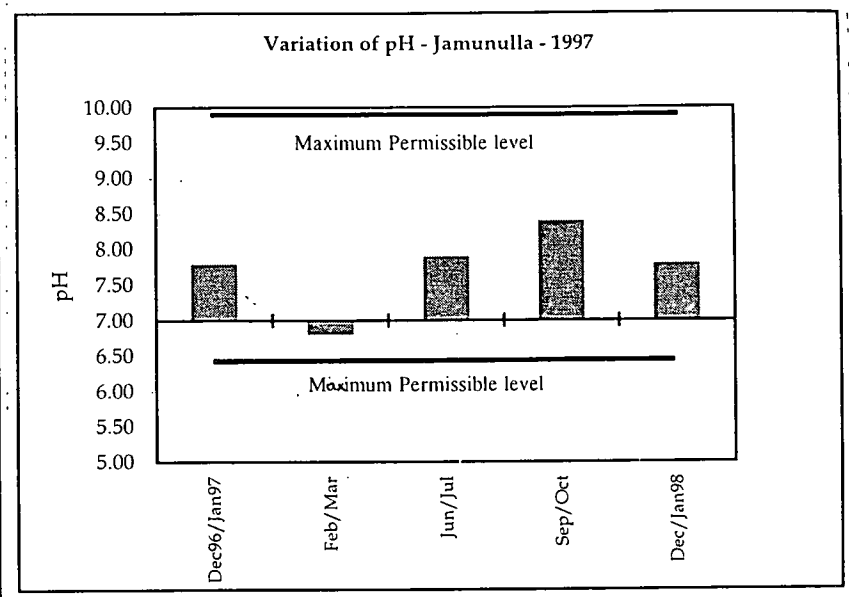
Sep/Oct
Dec/Jan98


Variation of pH - Milani FC - 1997
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
Jun/Jul
Sep/Oct
Dec/Jan98


Variation of pH - Jamunulla - 1997
10.00
9.50
9.00
8.50
8.00
7.50
7.00
6.50
6.00
5.50
5.00
pH
Maximum Permissible level
Maximum Permissible level
Dec96/Jan97
Feb/Mar
Jun/Jul
Sep/Oct
Dec/Jan98

WATER QUALITY MONITORING OF GROUND WATER IN PUTTLUM AREA
Sampling and analysis carried ouit by CEA Laboratory
Parameter pH 1997

Location No	Sampling Point	June	July	Aug	Oct	Nov	
P99	Government Hospital	7.8	7.7	8.0	8.6		7.7
P69	Vidyasara Maha Vidyalaya	-	D	D	8.8		7.3
P56	Sri Suddamaramaya	7.7	7.7	8.0		8.3	7.8
P100	Mr Pusuba	8.1	D	D		7.5	7.4
P102	Iginimitiya Project office	7.9	8	8.2		8	7.5
P72	An/ Thonigala Vidyalaya	7.4	7.5	7.9	8.5		7.6
P131	Sugatharamaya	7.9	7.9	8.0		8.7	7.9
K355	Mr S Abdul Casim	7.5	8.1	7.1	8.6		7.8
P82	Sri Sugathabimbaramaya	7.6	-	7.8	8.8		
P67	Ch/Sri Saranankara Perivena	7.5	-	8.1	8.4		7.2
P68	Well Near 2 Mile Post	7.5	7.8	8.1	8.2		7.8
P50	Dharmaragikaramaya	7.7	7.8	8.3	8.4		7.8
P108	Veternery Resoures Board	7.6	-	8.2	8.4		7.9
P105	In Front of Church	7.7	7.7	7.3	8.4		7.6
P130	Mr J A Wijesekara	-	7.7	-	7.6		
P74	Mr Sarath Yapa	-	7.1	-	7.3		
P31	Mr W K Regulet Fernanda	7.5	-	6.1	8.3		
P114	Mr Nimal Bandara	-	-	-			
P59	Muslim College	7.5	7.8	8.1	8.1		7.6
P66	Sinhala Vidyalaya	7.3	7.6	6.7	7.7		7.3
P74	Govt.College Nawadankulama	7.5	6.8	D			
P93	Agunawila Government College	8.0	8.2		8.5		7.7
P95	Kumarapallam Puttu Sub office	7.6	7.7	7.3	8.5		7.8
P121	Mr Simion Fernando		7.7	-			
P42	Mr B A Agnes		-	7.4	8.4		7.9

WATER QUALITY MONITORING OF THE GROUND WATER IN KURUNEGALA AREA
Sampling & Analysis Carried out By CEA Laboratory staff
Parameter pH 1997

1	Sampling Point	Location	Jan	Jun	July	Aug	Sep	Oct	Nov	Jan 98	
K237	Waduragala Viharaya	Co Ku Main Rd	7.50	7.60	7.90	7.3	8.00	-	7.1	7.4	
K352	Rankithagala Viharaya	Eagalle Wadakada	7.70	7.80	8.20	7.8	7.90	-	7.4	7.7	
K295	Mrs A Seeelawathie	Ihalaradawa Kirimatiyawa	8.25	8.20	--	-	-	7.4	-	-	
K345	Muruthange Jayakodi Vidyalaya	Muruthange	7.64	7.50	--	-	-	6.6	-	-	
K354	Mr D H M Abeywardena	Mahelowa Bopitiya Kurunegala	7.21	7.90	--	-	-	7.6	-	-	
K349	Ratnajothi Perivena	Welpalla	5.74	6.00	--	-	-	6.9	-	-	
K277	Mr S B M Thilakaratne	Palugammuwa Dummalasooriya	6.08	7.00	--	-	-	5.9	-	-	
K256	Wimalawathi Rupasinghe	Reetadeniya Hettipola	7.24	-	--	-	-	7.0	7.8	-	
K297	Mr W W Fernando	Apaladeniya	7.05	-	--	-	-	7.7	-	-	
K258	Mr D M Ranbanda	Thalgahehena	7.46	-	--	-	-	8.0	-	-	
K355	Mudalindaramaya	Rangama Wellewa	8.14	8.00	8.30	7.9	8.00	7.7	7.8	7.5	
K189	Mr H G Piyasena	Gonagama Stores Gonagama	8.23	8.00	7.90	7.6	8.30	7.5	8.0	7.4	
K156	Bodhirukaramaya	Minuwangate	7.76	7.90	7.90	7.7	7.80	7.2	7.3	7.2	
K103	Mr H Seneviratne	Walauwa Ballela	8.17	7.80	7.90	7.9	8.30	7.9	7.9	7.6	
K82	Mr H W Wijeratne	Yaddigamuwa Konwewa	8.29	8.00	7.90	7.8	8.20	8.1	8.1	8.0	
K52	Near Railway Station	Morogollagama	8.03	8.00	8.00	7.6	7.60	8.0	7.7	8.0	
K86	Maha Vidyalaya	Nawana	7.77	8.00	7.70	7.3	0.80	-	7.3	7.4	
K91	Samapetha Dispensary	Monnekulama	7.75	7.90	7.80	Dry	7.50	-	7.8	7.7	
K45	R D A Authority	Abanpola	7.98	8.10	8.10	7.2	7.60	7.8	7.2	7.5	
K29	Mr D D Samson Appuhamy	Dematewa Gallewa Galgamuwa	-	8.50	7.80	7.2	Dry	-	7.8	7.6	
K31	Mr K B Mudiyannegama	Kumudu Niwasa Mudiyannegama	8.32	8.80	8.10	7.8	8.10	8.2	8.0	7.8	
K23	Commen Well	Model Villege Mahananneriya	8.11	8.60	Dry	Dry	Dry		D	-	
	Mr H G Somasiri	90,Lecola Wewa Galgamuwa	8.12	7.00	8.30	7.5	7.80	7.8	7.8	7.9	
KK188	K/Medamulla De Maha Vidyalaya	Malsiripura	-	7.90	7.70	7.4	7.60	-	7.5	7.5	
K137	Government Dispensary	Makulpotha	7.94	8.00	8.10	7.1	8.00	-	7.6	7.8	
	Mrs Premawathie Manike	Nabadawa Nikawaratiya	7.96	7.50	8.00	7.3	8.20	7.4	7.9	7.6	
K171	Mr W A Fernando	Walaswewa	7.78	7.90	8.00	7.4	7.90	7.7	7.5	7.4	
K245	Ganegoda viharaya	Ganegoda	7.80	8.00	7.60	7.2	7.50	-	7.3	7.4	

Annexure IV

Nitrate (NO_3^-) levels of Ground Water Samples in Puttalam, Kalpitiya and Kurunegala areas for 1997.

YEAR 1997
WATER QUALITY MONITORING OF THE DOMESTIC AND AGRO WELLS IN KALPITIYA AREA
Sampling And Testing Carried Out By CEA Laboratory Staff

Parameter NO3- mg/l

Sampling Point	Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Mahatun	9.251	7.926	15.090	-	0.226
Mr Arthur Wadiya	10.250	13.959	0.181	0.250	1.329
Mr Mervin Bopearachchi	0.000	0.000	0.317	0.015	1.036
Fishing Camp Mampuri Colony	12.450	17.68	6.005	24.519	22.006
Mr A Basil	4.200	4.291	14.799	1.685	0.703
Mr A Benadict	2.740	2.920	14.718	3.581	0.874
Mr B Simeon Pillai	3.772	3.772	-	-	1.262
Mr Wijenayake	12.200	14.996	13.901	12.362	7.119
Ralahamige Fishing Camp	9.520	10.653	7.596	24.743	0.318
Junior School	2.003	2.030	-	-	0.682
Mrs Mariya Reeta	5.532	5.593	9.611	9.900	0.795
Mr Maximas Gabrial	7.200	7.308	1.933	5.690	1.609
Rifan Mills	0.093	0.093	12.218	1.200	0.675
Upali Fernando Fishing Camp	12.630	15.379	15.939	19.200	0.527
Mr Rifan	0.975	1.802	0.000	-	3.374
Nara Water Supply Station	0.062	0.077	0.181	0.180	0.181
Mr Etes Appuhamy	0.182	0.182	14.718	14.000	12.740
Mr Anthony Robert	3.002	3.017	14.799	14.520	13.112
Mr Ratnapala	3.250	3.287	6.005	6.000	4.361
Well Near Steven Church	3.200	3.344	13.901	12.520	11.050
Milani Fishinmg Camp	12.000	14.963	7.596	6.952	5.317
Mudallippali G Muslim V	7.520	7.927	0.000	0.000	0.051
Agro Well Near Church	0.215	0.278	1.933	0.956	0.978
Mr M Abdul	0.000	-	9.611	9.852	7.358
P/Thigalli G M M V	2.003	2.041	1.933	1.092	1.043
Mr A G Jammunulla	0.965	1.066	15.939	14.520	13.760
Mr B A Ugus	0.222	0.222	15.096	14.250	15.047
Mr Jamaldeen	6.520	7.614	0.317	0.311	0.117

YEAR 1997

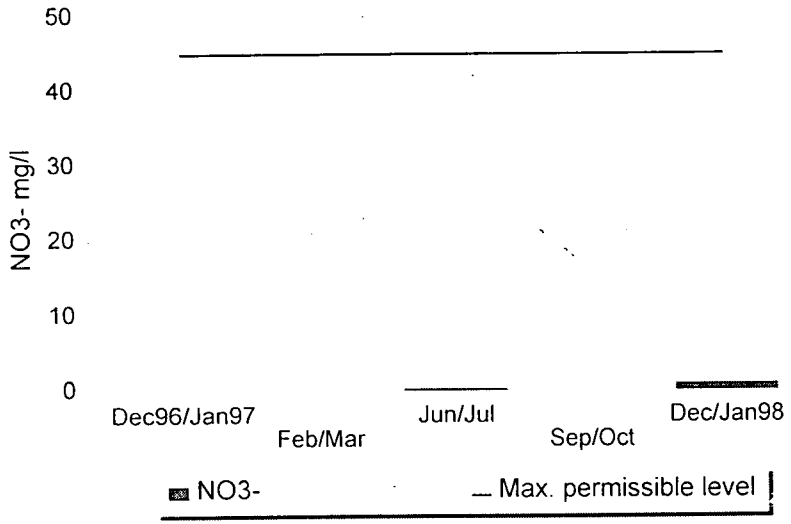
WATER QUALITY MONITORING OF THE DOMESTIC AND AGRO WELLS IN KALPITIYA AREA

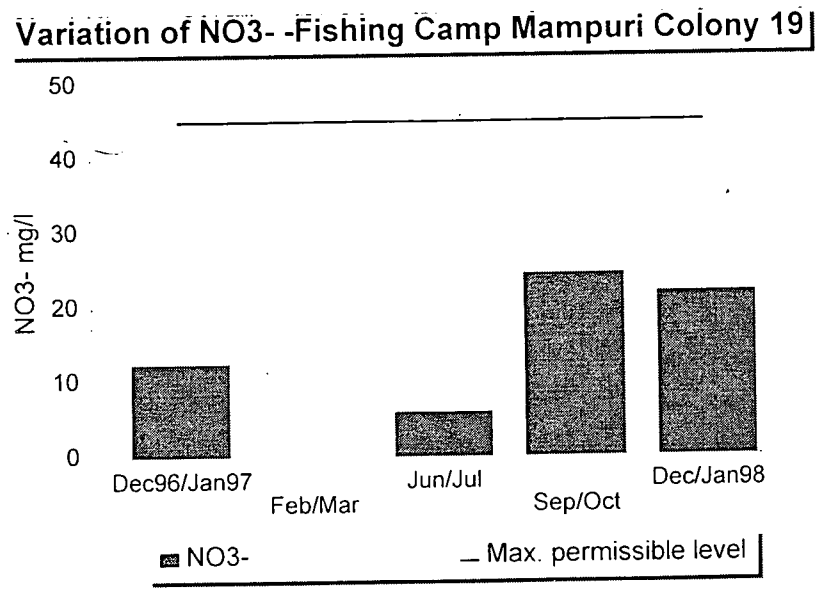
Sampling And Testing Carried Out By CEA Laboratory Staff

Parameter NO3- mg/l

		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Mervin Bopearachchi	NO3-	0.000	0.000	0.317	0.015	1.036
	Max. permissible level	45	45	45	45	45

		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Fishing Camp Mampuri Colony	NO3-	12.450	17.68	6.005	24.519	22.006
	Max. permissible level	45	45	45	45	45





WATER QUALITY MONITORING OF GROUND WATER IN PUTTLUM AREA

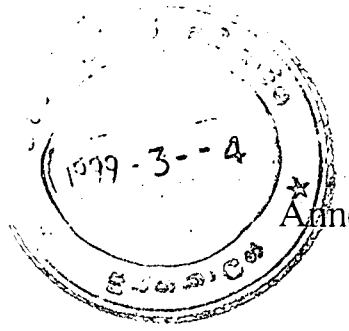
Sampling and analysis carried ouit by CEA Laboratory

Parameter NO3- mg/l

Location No	Sampling Point	June	July	Aug	Oct	Nov
P99	Government Hospital	0.240	1.420	0.210	2.990	2.368
P69	Vidyasara Maha Vidyalaya	-	D	D	0.527	0.891
P56	Sri Suddamaramaya	0.750	0.170	0.470	0.000	0.670
P100	Mr Pusuba	1.350	D	D		4.831
P102	Iginimitiya Project office	0.490	0.120	0.770		1.108
P72	An/ Thonigala Vidyalaya	0.780	0.090	0.070	0.003	0.549
P131	Sugatharamaya	0.110	0.240	1.500		0.954
K355	Mr S Abdul Casim	0.150	2.920	0.010	2.827	0.536
P82	Sri Sugathabimbaramaya	0.710	-	0.070	0.137	
P67	Ch/Sri Saranankara Perivena	0.300	-	0.01	0.00	0.784
P68	Well Near 2 Mile Post	0.870	0.280	7.290	0.041	1.005
P50	Dharmaragikaramaya	0.150	0.600	0.050	6.745	3.867
P108	Veternery Resoures Board	0.300	-	0.160	0.584	1.918
P105	In Front of Church	0.220	0.310	0.090	0.168	1.341
P130	Mr J A Wijesekara	-	0.090	-	0.006	
P74	Mr Sarath Yapa	-	2.090	-	2.130	
P31	Mr W K Regulet Fernanda	1.680	-	0.270	4.134	
P114	Mr Nimal Bandara	-	-	-		
P59	Muslim College	7.390	9.130	0.250	1.274	6.394
P66	Sinhala Vidyalaya	1.140	1.410	0.040	0.095	1.341
P74	Govt.College Nawadankulama	1.680	0.240	D		
P93	Agunawila Government College	0.310	0.600		0.140	0.130
P95	Kumarapallam Puttu Sub office	0.010	0.600	0.010	0.169	0.388
P121	Mr Simion Fernando		3.000	-		
P42	Mr B A Agnes		-	0.010	8.503	0.058

WATER QUALITY MONITORING OF THE GROUND WATER IN KURUNEGALA AREA
Sampling & Analysis Carried out By CEA Laboratory staff
Parameter NO3- 1997

1	Sampling Point	Location	Jan	Jun	July	Aug	Sep	Oct	Nov	Jan 98
K237	Waduragala Viharaya	Co Ku Main Rd	0.000	0.025	0.410	0.268	0.003	-	0.064	0.203
K352	Rankithagala Viharaya	Eagalle Wadakada	0.286	0.212	0.260	0.409	0.000	-	0.018	0.278
K295	Mrs A Seeelawathie	Ihalaradawa Kirimatiyawa	0.000	0.000	--	-	-	0.620	-	-
K345	Muruthange Jayakodi Vidyalaya	Muruthange	0.106	0.271	--	-	-	0.720	-	-
K354	Mr D H M Abeywardena	Mahelowa Bopitiya Kurunegala	0.131	0.000	--	-	-	0.580	-	-
K349	Ratnajothi Perivena	Welpalla	0.881	0.706	--	-	-	0.500	-	-
K277	Mr S B M Thilakaratne	Palugammuwa Dummalasooriya	0.993	0.000	--	-	-	0.350	-	-
K256	Wimalawathi Rupasinghe	Reetadeniya Hettipola	0.418	-	--	-	-	1.160	0.000	-
K297	Mr W W Fernando	Apaladeniya	0.088	-	--	-	-	0.250	-	-
K258	Mr D M Ranbanda	Thalgahehena	0.236	-	--	-	-	0.930	-	-
K355	Mudalindaramaya	Rangama Wellewa	0.037	0.199	0.210	0.289	0.000	0.190	0.078	0.165
K189	Mr H G Piyasena	Gonagama Stores Gonagama	0.000	0.176	0.130	0.214	0.000	0.331	0.000	0.198
K156	Bodhirukaramaya	Minuwangate	0.257	0.124	0.120	0.154	0.000	0.146	0.006	0.105
K103	Mr H Seneviratne	Walauwa Ballela	0.107	0.056	0.210	0.125	0.000	0.003	0.000	0.112
K82	Mr H W Wijeratne	Yaddigamuwa Konwewa	0.109	1.180	0.150	0.154	0.000	1.781	2.590	0.130
K52	Near Railway Station	Morogollagama	3.205	6.422	8.330	11.159	0.017	9.008	1.068	9.621
K86	Maha Vidyalaya	Nawana	0.000	0.182	0.240	0.214	0.000	-	0.000	0.214
K91	Samapetha Dispensary	Monnekulama	0.000	0.212	0.150	Dry	0.000	-	0.287	0.072
K45	R D A Authority	Abanpola	0.529	0.102	0.260	0.324	0.062	0.634	0.311	0.291
K29	Mr D D Samson Appuhamy	Dematewa Gallewa Galgamuwa	-	0.309	0.630	0.739	Dry	-	0.422	0.623
K31	Mr K B Mudiyannegama	Kumudu Niwasa Mudiyannegama	0.000	0.025	0.290	0.368	0.000	0.466	0.171	0.237
K23	Commen Well	Model Villege Mahananneriya	0.934	0.386		Dry	Dry	-	D	Dry
	Mr H G Somasiri	90,Lecola Wewa Gaigamuwa	0.418	0.034	0.120	1.284	0.000	0.398	0.062	1.083
KK188	K/Medamulla De Maha Vidyalaya	Malsiripura	-	0.354	0.990	0.934	0.000	-	0.315	0.706
K137	Government Dispensary	Makulpotha	0.000	0.169	0.170	0.458	0.000	-	0.000	0.225
	Mrs Premawathie Manike	Nabadawa Nikawaratiya	0.781	0.029	0.220	0.409	0.000	0.577	0.153	0.305
K171	Mr W A Fernando	Walaswewa	0.128	0.108	0.130	0.377	0.048	0.323	0.041	0.507
K245	Ganegoda viharaya	Ganegoda	0.043	0.074	0.220	0.233	0.002	-	0.098	0.275



Annexure V

Phosphate (PO_4^{3-}) levels of Ground Water Samples in Puttalam, Kalpitiya and Kurunegala areas for 1997.

YEAR 1997
WATER QUALITY MONOTORING OF THE DOMESTIC AND AGRO WELLS IN KALPITIYA AREA
Parameter PO4-3

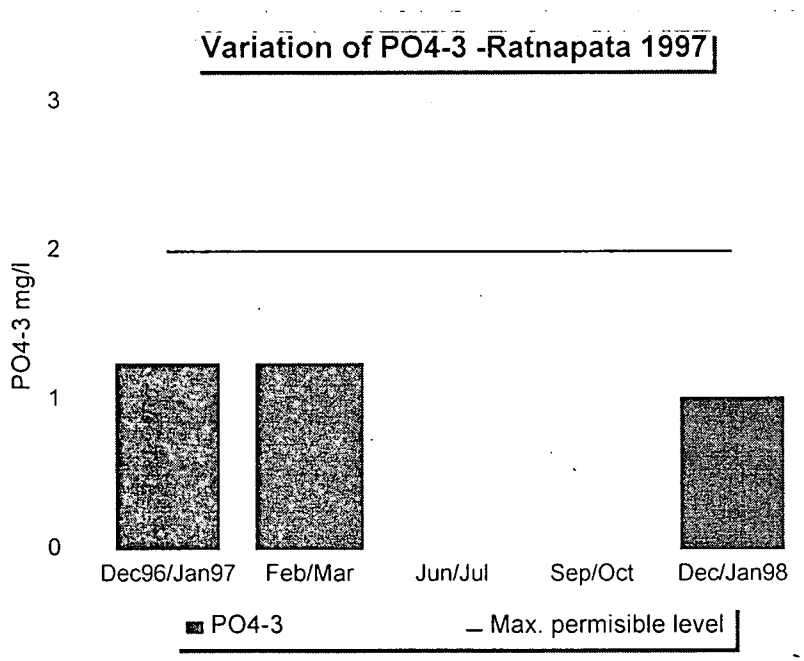
Sampling Point	Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Mr Mahatun	0.112	0.116	0.000	-	0.044	
Mr Arthur Wadiya	0.000	0.000	0.000	0.010	0.259	
Mr Mervin Bopearachchi	0.000	0.000	0.000	0.013	0.024	
Fishing Camp Mampuri	0.006	0.006	0.000	0.001	1.026	
Mr A Basil	0.033	0.035	0.000	0.007	0.014	
Mr A Benadict	0.000	0.000	0.034	0.010	0.202	
Mr B Simeon Pillai	0.053	0.054	-	-	0.081	
Mr Wijenayake	0.000	0.000	0.000	0.045	0.017	
Ralahamige Fishing Ca	0.030	0.030	0.074	0.006	0.060	
Junior School	0.000	0.000	-	-	0.099	
Mrs Mariya Reeta	0.000	0.000	0.000	0.073	0.005	
Mr Maximas Gabrial	0.000	0.000	0.000	0.000	0.008	
Rifan Mills	0.022	0.024	0.000	0.001	0.182	
Upali Fernando Fishing	0.006	0.008	0.000	0.000	0.070	
Mr Rifan	0.542	0.548	0.000	-	0.164	
Nara Water Supply Stati	0.000	0.000	0.000	0.000	0.032	
Mr Etes Appuhamy	0.000	0.000	0.034	0.030	0.130	
Mr Anthony Robert	0.021	0.025	0.000	0.000	0.092	
Mr Ratnapala	1.250	1.251	0.000	0.000	1.018	
Well Near Steven Churc	0.165	0.169	0.000	0.000	0.734	
Milani Fishinmg Camp	0.112	0.117	0.074	0.072	0.203	
Mudallippali G Muslim V	0.510	0.052	0.000	0.000	0.257	
Agro Well Near Church	0.250	0.268	0.000	0.000	0.194	
Mr M Abdul	0.002	-	0.096	0.095	0.175	
P/Thigalli G M M V	0.162	0.163	0.000	0.000	0.295	
Mr A G Jammunulla	0.154	0.199	0.000	0.000	0.407	
Mr B A Ugus	0.301	0.319	0.000	0.000	0.221	
Mr Jamaldeen	0.000	0.000	0.000	0.000	1.926	

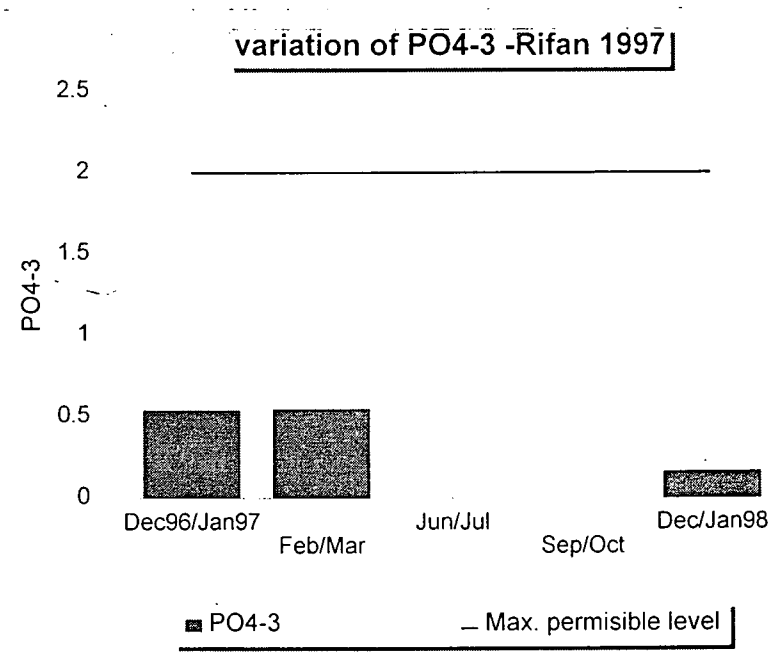
YEAR 1997

WATER QUALITY MONOTORING OF THE DOMESTIC AND AGRO WELLS IN KALPITIYA AREA

Parameter PO mg/l

		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Ratnapala	PO4-3	1.25	1.251	0.000	0.000	1.0183
	Max. permisible level	2	2	2	2	2
Mr Rifan	PO4-3	0.542	0.548	0.000	-	0.1637
	Max. permisible level	2	2	2	2	2





WATER QUALITY MONITORING OF GROUND WATER IN PUTTLUM AREA

Sampling and analysis carried ouit by CEA Laboratory

Parameter PO4-3 mg/l

Location No	Sampling Point	June	July	Aug	Oct	Nov
P99	Government Hospital	0.010	0.020	0.040	0.110	0.061
P69	Vidyasara Maha Vidyalaya	-	D	D	0.077	0.052
P56	Sri Suddamaramaya	0.010	0.00	0.01	0.000	0.005
P100	Mr Pusuba	0.010	D	D		0.043
P102	Iginimitiya Project office	0.010	0.00	0.01		0.061
P72	An/ Thonigala Vidyalaya	0.010	0.020	0.160	0.085	0.021
P131	Sugatharamaya	0.200	0.110	0.470		0.030
K355	Mr S Abdul Casim	0.000	0.00	0.01	0.000	0.065
P82	Sri Sugathabimbaramaya	0.010	-	0.020	0.010	
P67	Ch/Sri Saranankara Perivena	0.400	-	0.010	0.000	0.022
P68	Well Near 2 Mile Post	0.040	0.060	0.040	0.072	0.015
P50	Dharmaragikaramaya	0.010	0.00	0.01	0.078	0.034
P108	Veternery Resoures Board	0.050	-	0.060	0.077	0.063
P105	In Front of Church	0.010	0.00	0.17	0.005	0.049
P130	Mr J A Wijesekara	-	0.00	-	0.000	
P74	Mr Sarath Yapa	-	0.00	-	0.000	
P31	Mr W K Regulet Fernanda	0.010	-	0.010	0.033	
P114	Mr Nimal Bandara	-	-	-		
P59	Muslim College	0.020	0.050	0.040	0.000	0.019
P66	Sinhala Vidyalaya	0.010	0.00	0.01	0.006	0.045
P74	Govt.College Nawadankulama	0.010	0.060	D		
P93	Agunawila Government College	0.020	0.050		0.005	0.033
P95	Kumarapallam Puttu Sub office	0.010	0.00	0.01	0.000	0.018
P121	Mr Simion Fernando		0.020	-		
P42	Mr B A Agnes		-	0.020	0.083	0.033

WATER QUALITY MONITORING OF THE GROUND WATER IN KURUNEGALA AREA
Sampling & Analysis Carried out By CEA Laboratory staff
Parameter PO4-3 mg/l 1997

1	Sampling Point	Location	Jan	Jun	July	Aug	Sep	Oct	Nov	Jan 98
K237	Waduragala Viharaya	Co Ku Main Rd	0.024	0.021	0.010	0.002	0.000	-	0.005	0.516
K352	Rankithagala Viharaya	Eagalle Wadakada	0.095	0.102	0.070	0.001	0.045	-	0.026	0.158
K295	Mrs A Seeelawathie	Ihalaradawa Kirimatiyawa	0.000	0.005	--	-	-	0.001	-	-
K345	Muruthange Jayakodi Vidyalaya	Muruthange	0.000	0.011	--	-	-	0.003	-	-
K354	Mr D H M Abeywardena	Mahelowa Bopitiya Kurunegala	0.000	0.000	--	-	-	0.040	-	-
K349	Ratnajothi Perivena	Welpalla	0.000	0.000	--	-	-	0.001	-	-
K277	Mr S B M Thilakaratne	Palugammuwa Dummalasooriya	0.000	0.000	--	-	-	0.010	-	-
K256	Wimalawathi Rupasinghe	Reetadeniya Hettipola	0.000		--	-	-	0.020	0.000	-
K297	Mr W W Fernando	Apaladeniya	0.024		--	-	-	0.080	-	-
K258	Mr D M Ranbanda	Thalgahehena	0.196	-	--	-	-	0.002	-	-
K355	Mudalindaramaya	Rangama Wellewa	0.000	0.003	0.020	0.003	0.000	0.010	0.006	0.087
K189	Mr H G Piyasena	Gonagama Stores Gonagama	0.000	8.000	0.010	0.000	0.000	0.002	0.000	0.041
K156	Bodhirukaramaya	Minuwangate	0.000	0.012	0.010	0.001	0.000	0.267	0.009	0.095
K103	Mr H Seneviratne	Walauwa Ballela	0.052	0.008	0.030	0.003	0.208	0.040	0.171	0.088
K82	Mr H W Wijeratne	Yaddigamuwa Konwewa	0.010	0.010	0.010	0.018	0.015	0.010	0.003	0.104
K52	Near Railway Station	Morogollagama	0.019	0.034	0.020	0.053	0.020	0.020	0.150	0.158
K86	Maha Vidyalaya	Nawana	0.000	0.005	0.010	0.005	0.000	-	0.000	0.148
K91	Samapetha Dispensary	Monnekulama	0.162	0.318	0.250	Dry	0.069	-	0.058	0.011
K45	R D A Authority	Abanpola	0.463	0.030	0.400	0.019	0.989	0.015	0.118	0.088
K29	Mr D D Samson Appuhamy	Dematewa Gallewa Galgamuwa	-	0.058	0.110	0.014	Dry	-	0.033	0.966
K31	Mr K B Mudiyannegama	Kumudu Niwasa Mudiyannegama	0.028	0.046	0.030	0.041	0.001	0.220	0.145	0.158
K23	Commen Well	Model Villege Mahananneriya	0.389	0.809		Dry	Dry	-	D	-
	Mr H G Somasiri	90,Lecola Wewa Galgamuwa	0.000	0.008	0.010	0.004	0.000	0.221	0.000	0.378
KK188	K/Medamulla De Maha Vidyalaya	Malsiripura	-	0.003	0.010	0.005	0.000	-	0.000	0.001
K137	Government Dispensary	Makulpotha	0.033	0.025	0.020	0.002	0.004	-	0.010	0.006
	Mrs Premawathie Manike	Nabadawa Nikawaratiya	0.015	0.014	0.010	0.000	0.000	0.010	0.000	0.084
K171	Mr W A Fernando	Walaswewa	0.529	0.509	0.110	0.000	0.630	1.395	1.183	0.698
K245	Ganegoda viharaya	Ganegoda	0.107	0.111	0.110	0.004	0.120	-	0.011	0.006

Annexure VI

Electrical conductivity levels of Ground Water Samples in Puttalam, Kalpitiya and Kurunegala areas for 1997.

YEAR 1997

WATER QUALITY MONITORING OF THE DOMESTIC AND AGRO WELLS IN KALPITIYA AREA

Sampling And Testing Carried Out By CEA Laboratory Staff

Parameter Electrical Conductivity ms/cm

Sampling Point	Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Mahatun	0.50	2.2	1	-	0.77
Mr Arthur Wadiya	1.25	1.25	0.9	1.20	1.20
Mr Mervin Bopearachchi	0.34	0.34	0.3	0.27	0.42
Fishing Camp Mampuri Colony	1.33	1.33	1.4	1.40	1.1
Mr A Basil	1.91	1.91	1.2	1.20	1.00
Mr A Benadict	1.34	1.34	0.22	0.19	0.20
Mr B Simeon Pillai	0.87	0.87	1.7	-	0.40
Mr Wijenayake	0.65	0.66	1.8	1.80	2.00
Ralahamige Fishing Camp	0.83	0.831	1.4	0.75	8.00
Junior School	0.39	0.39	-	-	0.40
Mrs Mariya Reeta	0.55	0.55	1.3	1.40	1.20
Mr Maximas Gabrial	1.07	1.07	1.8	1.80	1.00
Rifan Mills	0.39	0.29	0.56	0.65	0.25
Upali Fernando Fishing Camp	0.49	0.49	3.5	2.20	1.80
Mr Rifan	17.80	1.8	62	-	7.60
Nara Water Supply Station	5.08	1.5	2.2	2.40	1.14
Mr Etes Appuhamy	1.27	5.5	7.9	8.50	3.58
Mr Anthony Robert	30.90	1.4	1.3	1.20	1.44
Mr Ratnapala	1.24	30	8.2	16.00	10.10
Well Near Steven Church	2.93	1.4	1.4	1.40	1.21
Milani Fishinmg Camp	1.03	4.1	5.5	5.90	3.32
Mudallippali G Muslim V	0.84	0.77	0.9	1.20	1.96
Agro Well Near Church	2.01	2.20	2.1	2.60	0.92
Mr M Abdul	0.76	-	2.1	1.80	0.70
P/Thigalli G M M V	0.63	0.9	1.1	1.00	0.91
Mr A G Jammunulla	0.84	0.77	0.82	0.80	0.83
Mr B A Ugus	1.52	0.78	0.81	1.10	0.73
Mr Jamaldeen	1.13	0.76	1.1	2.30	0.84

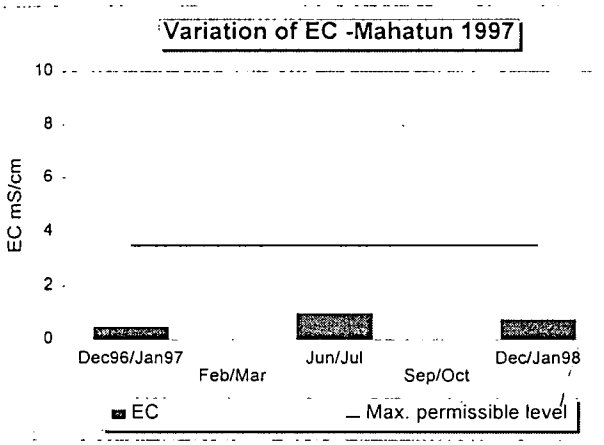
YEAR 1997

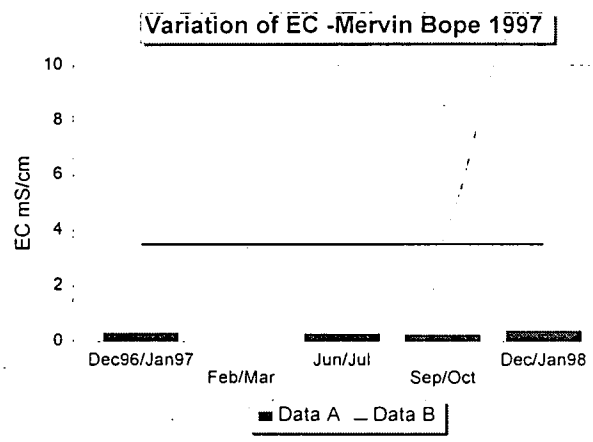
WATER QUALITY MONITORING OF THE DOMESTIC AND AGRO WELLS IN KALPITIYA AREA

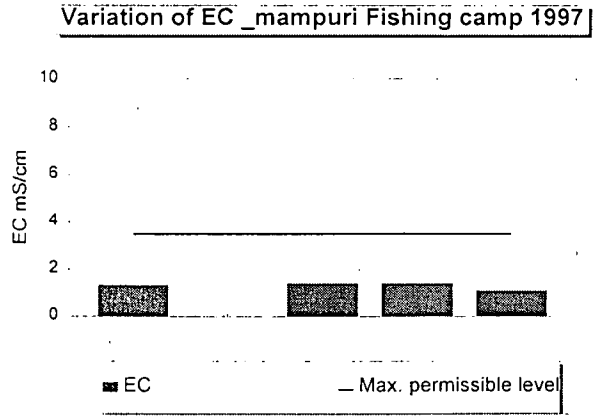
Sampling And Testing Carried Out By CEA Laboratory Staff

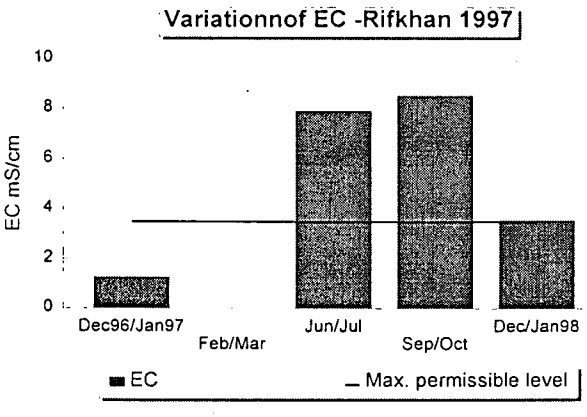
Parameter Electrical Conductivity mS/cm

Sampling Point		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98
Mr Mahatun	EC	0.50	2.2	1	-	0.77
	Max. permis	3.5	3.5	3.5	3.5	3.5
Mr Mervin Bopearachchi		0.34	0.34	0.3	0.27	0.42
	Max. permis	3.5	3.5	3.5	3.5	3.5
Mr Rifan	EC	17.80	1.8	6.2	-	7.60
	Max. permis	3.5	3.5	3.5	3.5	3.5
Fishing Cam	EC	1.33	1.33	1.4	1.40	1.1
	Max. permis	3.5	3.5	3.5	3.5	3.5









WATER QUALITY MONITORING OF GROUND WATER IN PUTTLUM AREA

Sampling and analysis carried ouit by CEA Laboratory

Parameter Electrical Conductivity mS/cm

Location No	Sampling Point	June	July	Aug	Oct	Nov
P99	Government Hospital	1.4	1.2	1.10	1.1	2.00
P69	Vidyasara Maha Vidyalaya	-	D	D	5.4	0.4
P56	Sri Suddamaramaya	2.7	2.7	2.70	2.70	2.20
P100	Mr Pusuba	0.45	D	D	0.30	0.9
P102	Iginimitiya Project office	2.2	2.3	2.50	3.10	5.30
P72	An/ Thonigala Vidyalaya	3	2.9	2.90	2.9	4.80
P131	Sugatharamaya	0.59	0.57	0.61	0.46	1.10
K355	Mr S Abdul Casim	2.8	2.5	2.50	2.6	2.90
P82	Sri Sugathabimbaramaya	0.8	-	1.10	0.72	
P67	Ch/Sri Saranankara Perivena	7.9	-	7.9	6.8	5.50
P68	Well Near 2 Mile Post	13	115	15.00	16	9.00
P50	Dharmaragikaramaya	4.2	5.4	6.00	5.8	0.60
P108	Veternery Resoures Board	0.6	-	0.43	0.54	0.60
P105	In Front of Church	2.7	2.9	0.79	2.0	1.40
P130	Mr J A Wijesekara	-	0.34	-	0.39	
P74	Mr Sarath Yapa	-	0.15	-	0.14	
P31	Mr W K Regulet Fernanda	0.31	-	0.30	2.8	
P114	Mr Nimal Bandara	-	-	-		
P59	Muslim College	10	11	15.00	18	5.50
P66	Sinhala Vidyalaya	1.9	2.0	1.90	1.8	1.10
P74	Govt.College Nawadankulama	9	10	D		
P93	Agunawila Government College	2.1	2.1		1.9	2.00
P95	Kumarapallam Puttu Sub office	0.49	0.49	0.44	0.57	0.60
P121	Mr Simion Fernando		2.2	-		
P42	Mr B A Agnes		-	0.62	1.10	0.60

Annexure VII

Chloride levels of Ground Water Samples in Puttalam, Kalpitiya and Kurunegala areas for 1997.

YEAR 1997

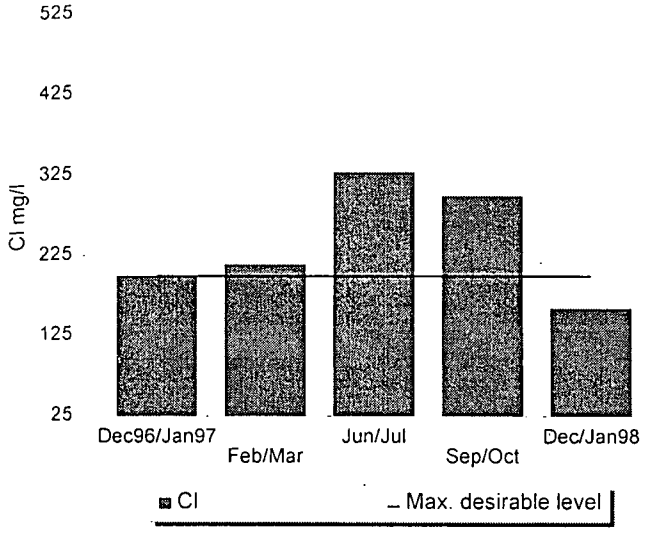
WATER QUALITY MONITORING OF THE DOMESTIC AND AGRO WELLS IN KALPITIYA AREA

Sampling And Testing Carried Out By CEA Laboratory Staff

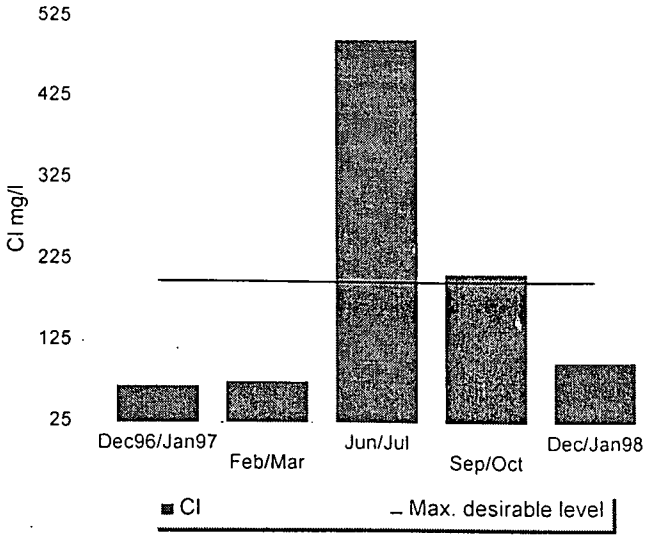
Parameter Chloride mg/l

Mr Mervin Bopearachchi	Cl	30	35	25	50	290	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Mr Mahatun	Cl	300	310	65	-	140	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Fishing Camp Mampuri	Cl	120	130	160	180	140	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Mr A Basil	Cl	190	195	140	150	210	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Mr Wijenayake	Cl	200	210	435	220	120	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Mr Anthony Robert	Cl	350	385	150	125	380	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Nara Water Supply Station	Cl	200	215	330	300	160	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Agro Well Near Church	Cl	70	75	500	210	100	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Mr A G Jammunulla	Cl	90	90	80	50	100	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Mr Rifan	Cl	400	0	2470	-	2680	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Mr Etes Appuhamy	Cl	1200	1225	2100	2000	1520	
	Max. desirable level	200	200	200	200	200	
		Dec96/Jan97	Feb/Mar	Jun/Jul	Sep/Oct	Dec/Jan98	Dec
Milani Fishinmg Camp	Cl	800	855	1230	1100	720	
	Max. desirable level	200	200	200	200	200	

Variation of Cl -Nara Well 1997



Variation of Cl -Agro Well 1997



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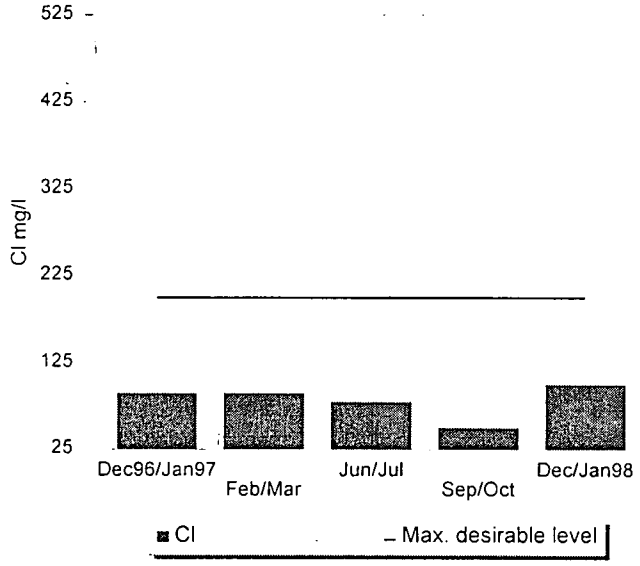
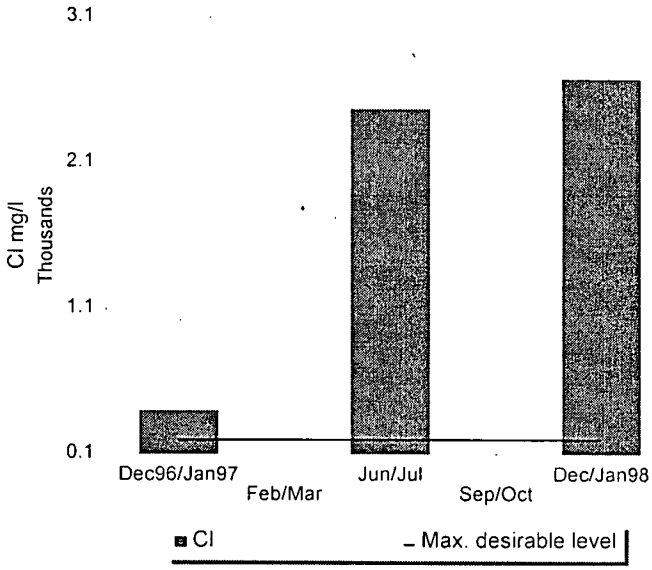
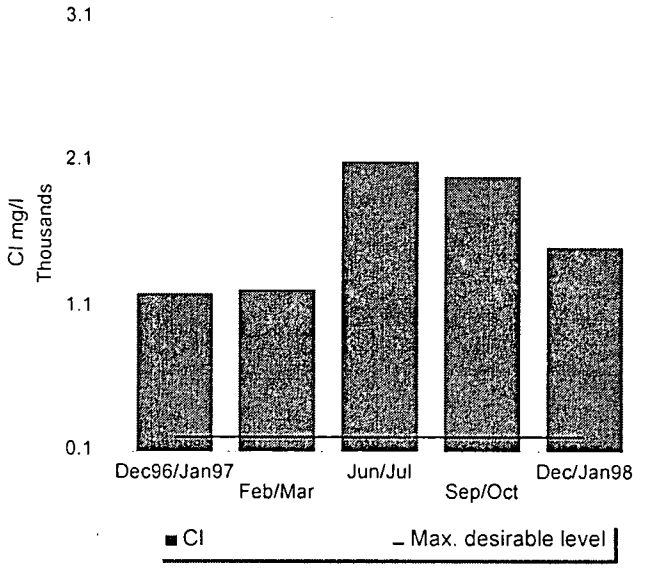


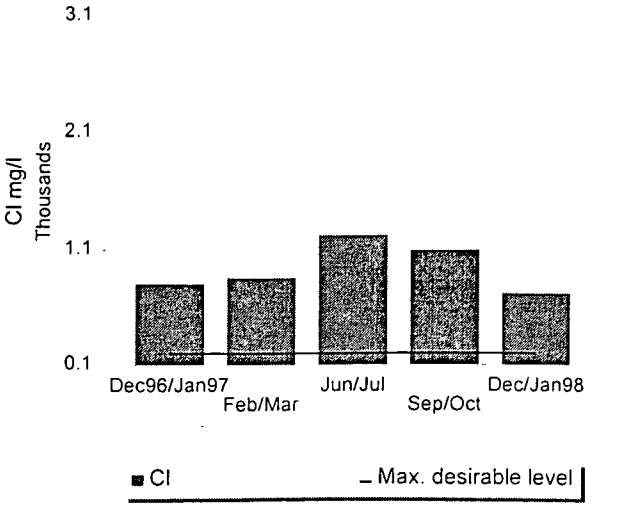
Variation of Cl -Rifhan 1997



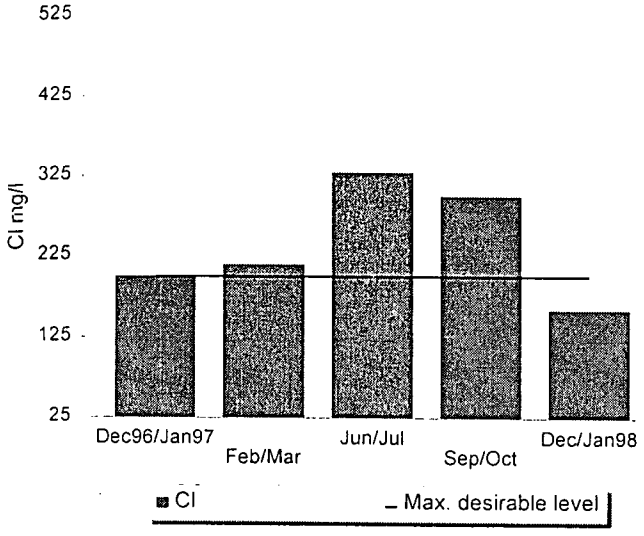
Variation of Cl -E Appuhamy 1997



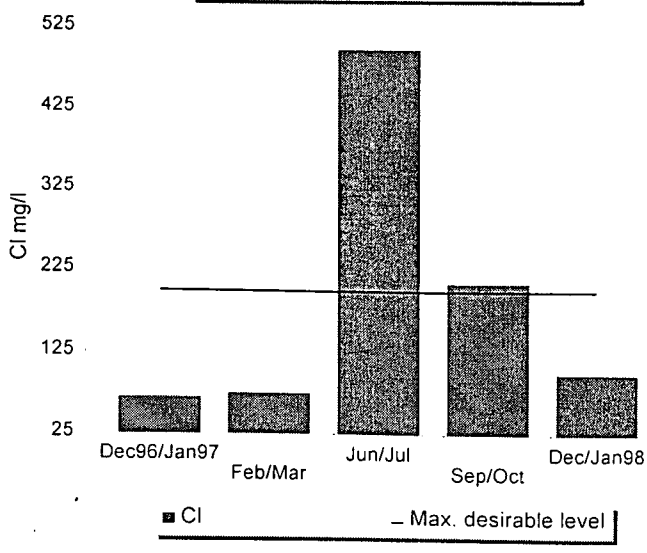
Variation of Cl -Malani Fishing Camp 1997



Variation of Cl -Nara Well 1997



Variation of Cl -Agro Well 1997



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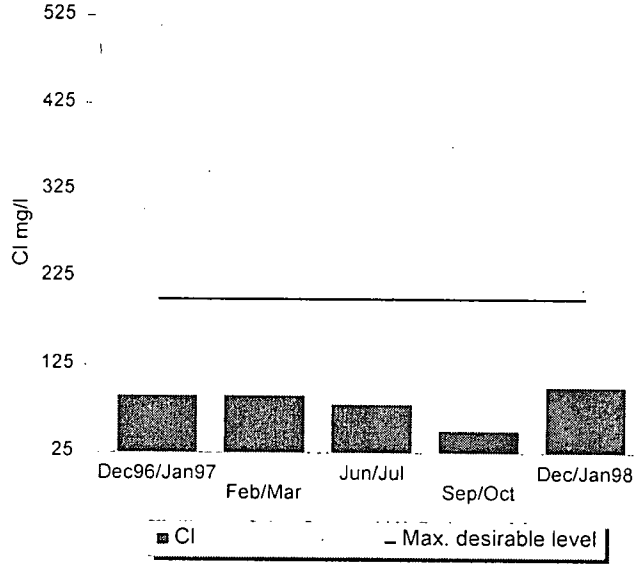

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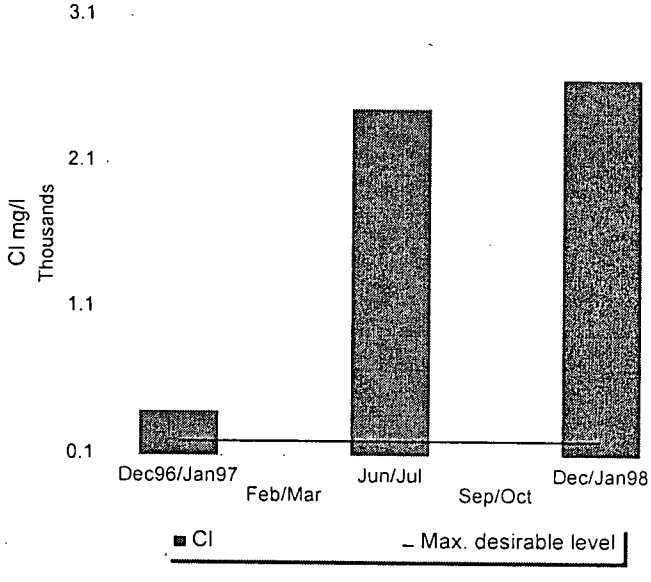
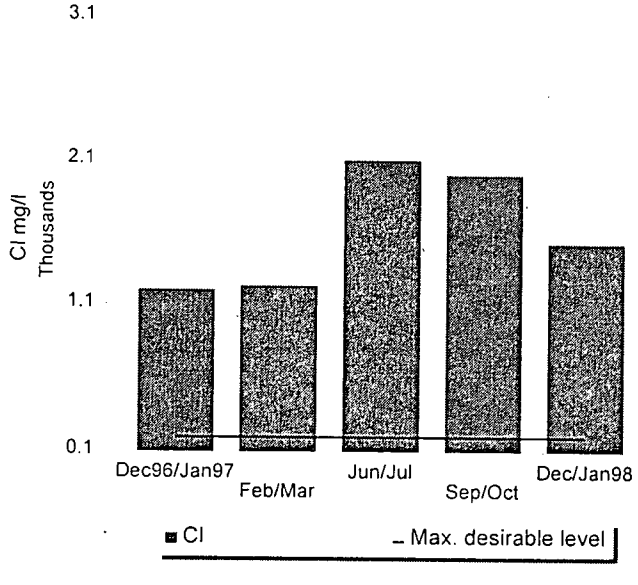
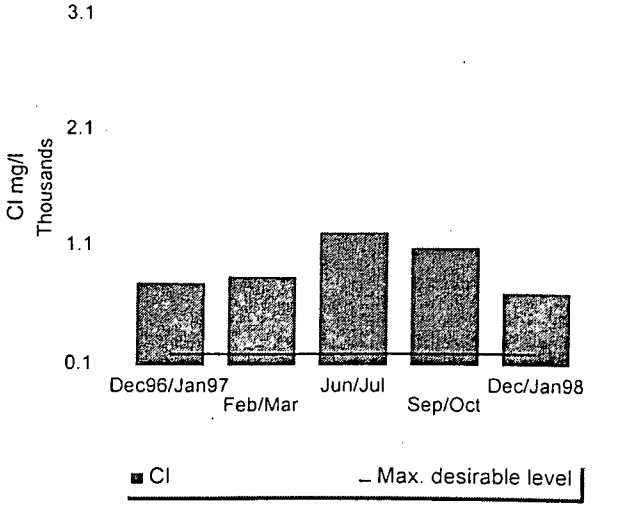


Variation of Cl -E Appuhamy 1997



Variation of Cl -Malani Fishing Camp 1997



WATER QUALITY MONITORING OF THE GROUND WATER IN KURUNEGALA AREA

Sampling & Analysis Carried out By CEA Laboratory staff

Parameter Chloride mg/l 1997

	Sampling Point	Jan	Jun	July	Aug	Sep	Oct	Nov	Jan 98
K237	Waduragala Viharaya	275	240	195	40	55	-	140	330
K352	Rankithagala Viharaya	35	50	50	210	55	-	25	90
K295	Mrs A Seeelawathie	70	30	--	-	-	150	-	-
K345	Muruthange Jayakodi Vid	20	30	--	-	-	30	-	-
K354	Mr D H M Abeywardena	30	30	--	-	-	60	-	-
K349	Ratnajothi Perivena	35	20	--	-	-	50	-	-
K277	Mr S B M Thilakaratne	25	30	--	-	-	50	-	-
K256	Wimalawathi Rupasinghe	775	-	--	-	-	50	275	-
K297	Mr W W Fernando	50	-	--	-	-	800	-	-
K258	Mr D M Ranbanda	45	-	--	-	-	170	-	-
K355	Mudalindaramaya	210	25	30	50	30	30	35	100
K189	Mr H G Piyasena	30	155	115	260	70	270	100	220
K156	Bodhirukaramaya	175	160	120	310	150	300	155	350
K103	Mr H Seneviratne	315	335	290	460	485	800	350	400
K82	Mr H W Wijeratne	195	265	280	500	260	520	175	140
K52	Near Railway Station	145	150	175	340	160	220	100	220
K86	Maha Vidyalaya	215	365	560	80	515	-	430	830
K91	Samapetha Dispensary	280	230	40	Dry	10	-	35	40
K45	R D A Authority	675	265	310	510	175	600	165	220
K29	Mr D D Samson Appuham	-	35	20	60	Dry	-	25	40
K31	Mr K B Mudiyannegama	165	105	150	230	85	200	160	620
K23	Commen Well	100	555		Dry	Dry	-	D	-
	Mr H G Somasiri	470	195	210	390	170	340	210	500
KK188	K/Medamulla De Maha Vi	-	40	25	80	25	-	50	110
K137	Government Dispensary	30	30	30	60	25	-	25	50
	Mrs Premawathie Manike	245	240	215	1,440	260	42	185	80
K171	Mr W A Fernando	215	155	790	1,600	120	160	60	230
K245	Ganegoda viharaya	45	35	25	60	290	-	35	80

Annex- VIII

Table S.1 Proposed inland water quality standards for different uses - continued

Parameter	Unit, Type of limit	Nature conser-vation	Drinking water, with simple treat-ment	Bathing	Fish and aquatic life	Drinking water, convent. treatment	Irrigation and agriculture	Minimum quality
Total ammonia (NH_3-N)	mg/l, max.							
- pH < 7.5		n	-	-	0.94	-	-	9.1
- pH = 8.0		-	-	-	0.59	-	-	4.9
- pH = 8.5		-	-	-	0.22	-	-	1.6
Chlorides (Cl)	mg/l, max	n	200 des. 1200 max.	-	-	200 des. 1200 max.	-	-
Cyanides (CN)	mg/l, max.	n	-	-	0.005	-	-	0.005
Fluorides (Fl)	mg/l, max.	n	1.5	-	-	1.5	-	-
Total phosphate (PO_4)	mg/l, max.	n	-	-	0.4[3]	-	-	0.7[3]
Sulphates (SO_4)	mg/l, max.	n	400	-	-	400	-	-
Total hardness	as $CaCO_3$ mg/l	n	250 des. 600 max.	-	-	-	-	-
Total cadmium (Cd)	µg/l, max.		5	-	H Cd < 60 0.2 60-120 0.8 120-180 1.3 >180 1.8	5	-	5

Continued on next page

Table S.1 Proposed inland water quality standards for different uses

Parameter	Unit, Type of limit	Nature conser-vation	Drinking water, with simple treat-ment	Bathing	Fish and aquatic life	Drinking water, convent. treatment	Irrigation and agriculture	Minimum quality
Colour	Hazen units, max.	n	5 des. 30 max.	-	-	300	-	-
Odour		n	unobj.	unobj.	-	-	-	-
Taste		n	unobj.	-	-	-	-	-
Dissolved oxygen	mg/l, min.	n	6	5	6 mean[1] 4 min. dly[2]	4	-	3
BOD (5 days, 20 °C)	mg/l, max.	n	2	-	-	3	-	4
pH		n	6.5-8.5	6-8.5	6-8.5	5.0-8.5	-	5.0-8.5
Total coliform	MPN/100 ml, (P=80%)	n	50	5000	20,000	5000	-	-
Faecal coliform	MPN/100 ml (P=80%)	n	250 des. 600 max.	-	-	-	-	-
Nitrates (NO_3-N)	mg/l, max.	n	-	-	-	-	-	5

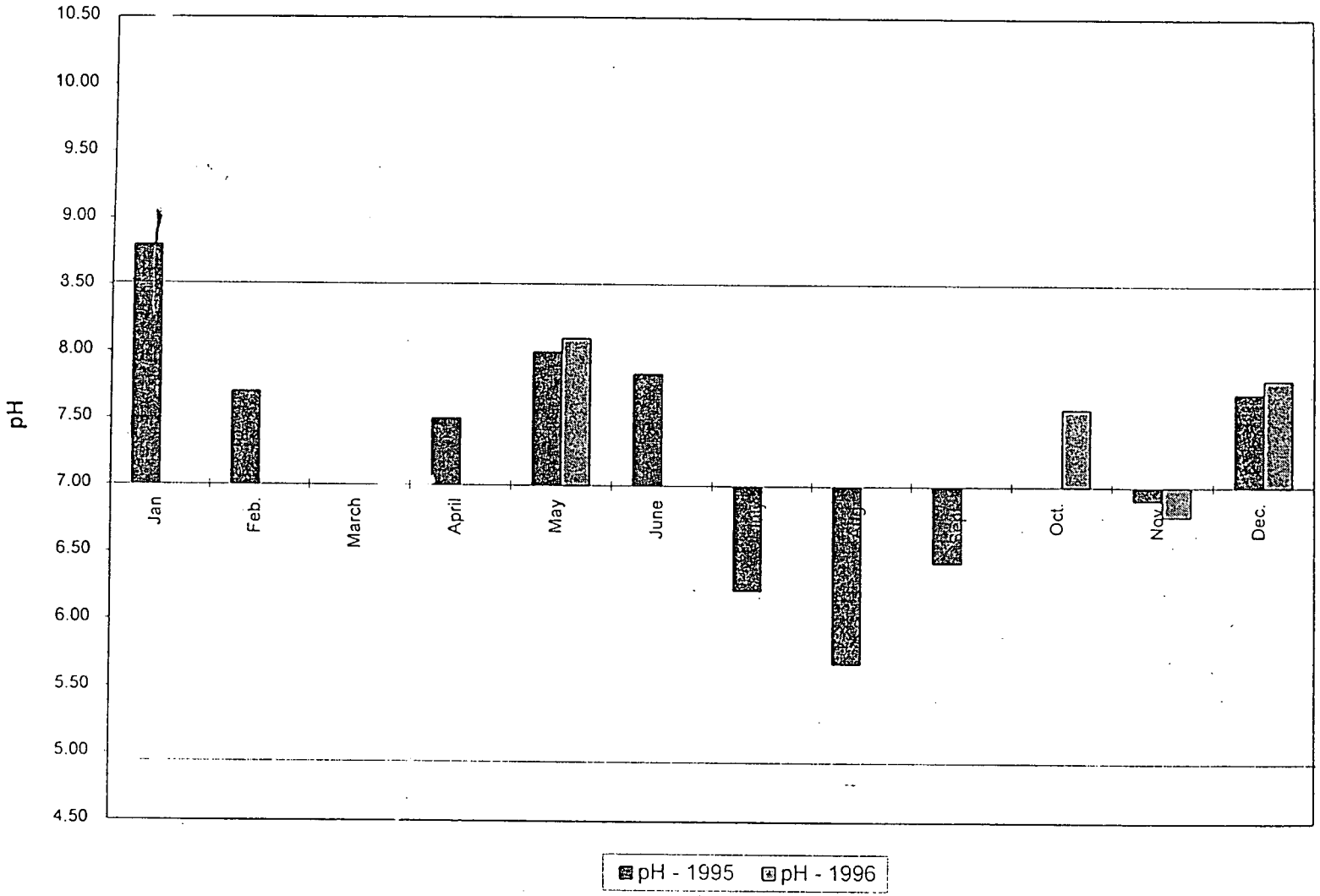
Annexure IX

pH levels of Surface Water Samples in
North Western Province during 1995 -1997.

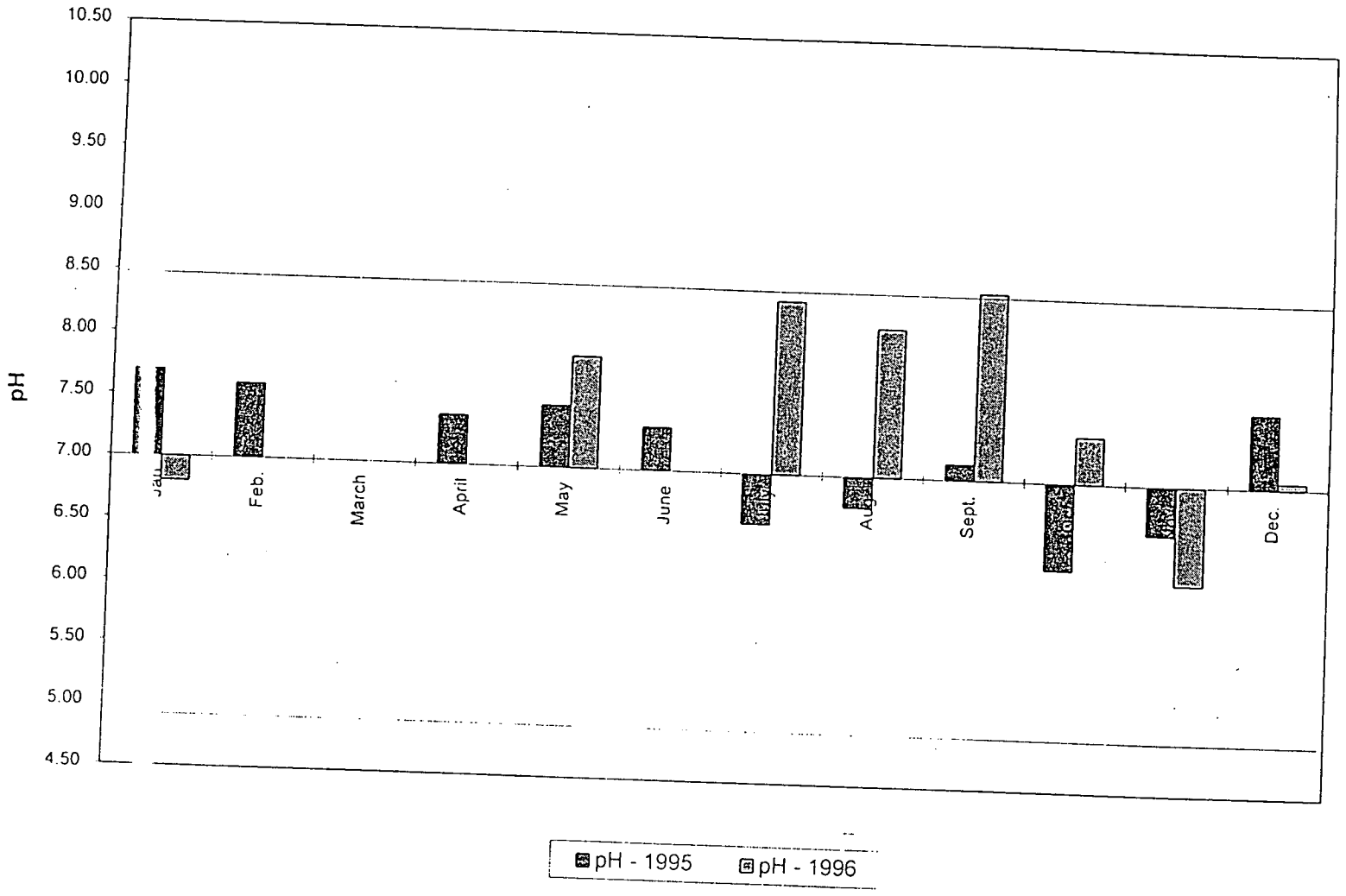
pH at Tanks and Rivers of NWP

		Jan	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1.	pH - 1995	8.91	8.60		8.70	8.10	8.79	8.35	8.18	8.2	7.3	7.6	8.3
	pH - 1996	8.40				7.10		8.50	8.60	8.41	7.75	6.59	6.26
2.	pH - 1995	7.92	7.70		8.00	7.70	7.54	7.22	7.09	7.45	6.5	7.5	8.1
	pH - 1996	6.90				7.50		8.30	8.31	8.63	7.41	6.51	7.60
3.	pH - 1995	8.00	7.50		8.40	7.80	7.78	7.19	6.95	7.00	-	7.2	7.9
	pH - 1996	7.50				7.90		8.32	8.25	8.35	7.27	6.44	7.43
4.	pH - 1995	7.13	7.40		7.50	7.50	7.26	6.70	7.00	6.81	6.80	7	7.3
	pH - 1996	6.80				7.50		8.20	7.94	8.11	7.28	5.56	7.07
5.	pH - 1995	7.98	9.10		7.70	7.50	7.19	6.65	6.79	6.67	6.40	6.9	6.8
	pH - 1996	6.70				7.90		7.80	8.00	8.10	7.37	5.75	7.27
6.	pH - 1995	8.45	8.20		8.10	7.80	7.63	9.04	7.13	6.94	5.70	7.2	8
	pH - 1996	7.40				7.55		8.10	7.90	8.24	7.66	5.70	7.23
7.	pH - 1995	8.29	8.10		7.70	7.60	7.73	7.49	7.42	7.18	7.60	7.3	7.3
	pH - 1996	7.10				7.65		7.54	7.70	8.46	7.64	4.61	6.27
8.	pH - 1995	8.41	8.20		8.10	8.40	8.54	8.07	7.99	7.86	7.70	7	7.8
	pH - 1996	7.9				7.98		8.25	8.30	8.37	7.62	6.39	6.64
9.	pH - 1995	8.80	7.70		7.50	8.00	7.84	6.22	5.68	6.43	7.00	6.9	7.7
	pH - 1996	0.00				8.10		-	-		7.58	6.78	7.8
10.	pH - 1995	7.70	7.60		7.40	7.50	7.35	6.59	6.75	7.13	6.29	6.6	7.6
	pH - 1996	6.80				7.90		8.40	8.20	8.51	7.38	6.2	7.05
11.	pH - 1995	9.78	9.60		9.70	9.80	10.14	9.62	9.06	9.45	8.80	9.3	8.8
	pH - 1996	8.93				9.20		9.4	8.94	9.05	7.52	7.49	6.67
12.	pH - 1995	8.37	8.70		8.50	8.40	8.73	8.24	8.32	8.51	8.31	7.4	8.3
	pH - 1996	8.10				8.40		-	8.30	8.45	-	6.43	7.21
13.	pH - 1995	8.48	8.20		8.00	8.20	8.32	7.89	7.31	7.73	7.40	7.9	7.7
	pH - 1996	7.9				7.60		8.20	8.20	8.23	-	6.38	7.73
14.	pH - 1995	8.23	8.30		8	8.30	8.19	7.66	7.69	7.58	7.40	7.4	7.7
	pH - 1996	7.10				7.70		8.10	8.10	8.12	-	6.65	7.65
15.	pH - 1995	8.36	8.20		7.90	8.20	8.25	7.88	7.20	7.73	7.40	7.6	7.9
	pH - 1996	7.6				7.80		8.00	-	8.32	-	7.31	7.74
16.	pH - 1995	8.95	8.80		8.40	8.90	8.73	8.05	7.68	7.81	7.90	7.8	8.5
	pH - 1996	8.20				7.70		8.18	0.00	8.16	-	6.78	7.87
17.	pH - 1995	8.50	8.00		8.30	8.20	8.29	7.45	7.37	7.54	7.60	7.4	7.9
	pH - 1996	7.80				7.90		-	8.30	8.10	-		6.93
18.	pH - 1995	7.30	7.00		0.00	7.40	7.58	7.04	6.91	-	6.90	7	7 7
	pH - 1996	7.50				7.75		8.40	8.24			7.75	7.84
19.	pH - 1995	8.91	8.80		8.90	8.80	8.83	8.15	8.14	7.90	7.90	7.7	8.2
	pH - 1996	8.10				8.10							
20.	pH - 1995	8.64	8.40		8.50	8.50	8.33	8.05	7.80	7.84	7.10	7.7	8.3
	pH - 1996	7.70				8.30							

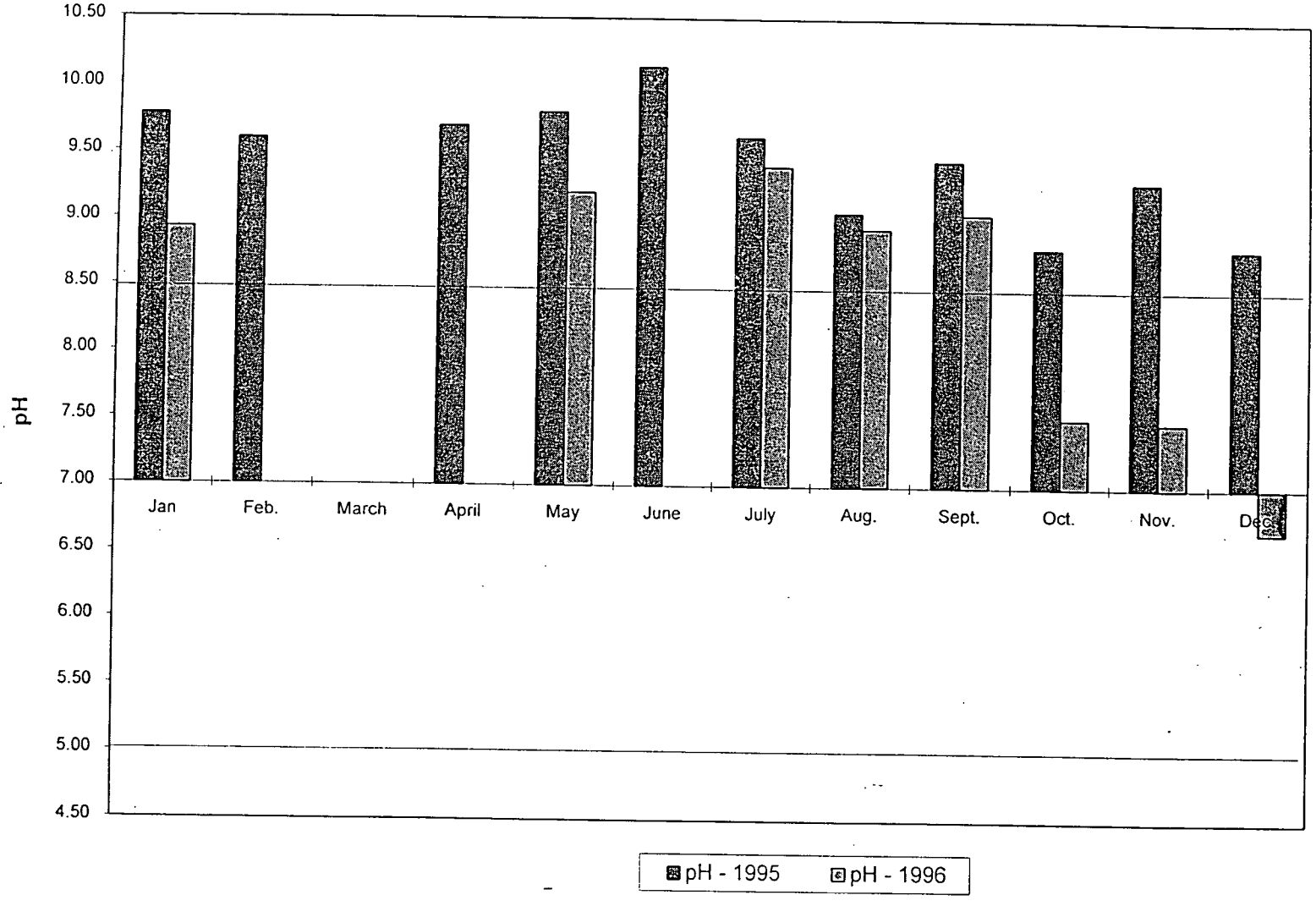
Variation of pH at Galagedara Aluthwewa 1995 - 1996



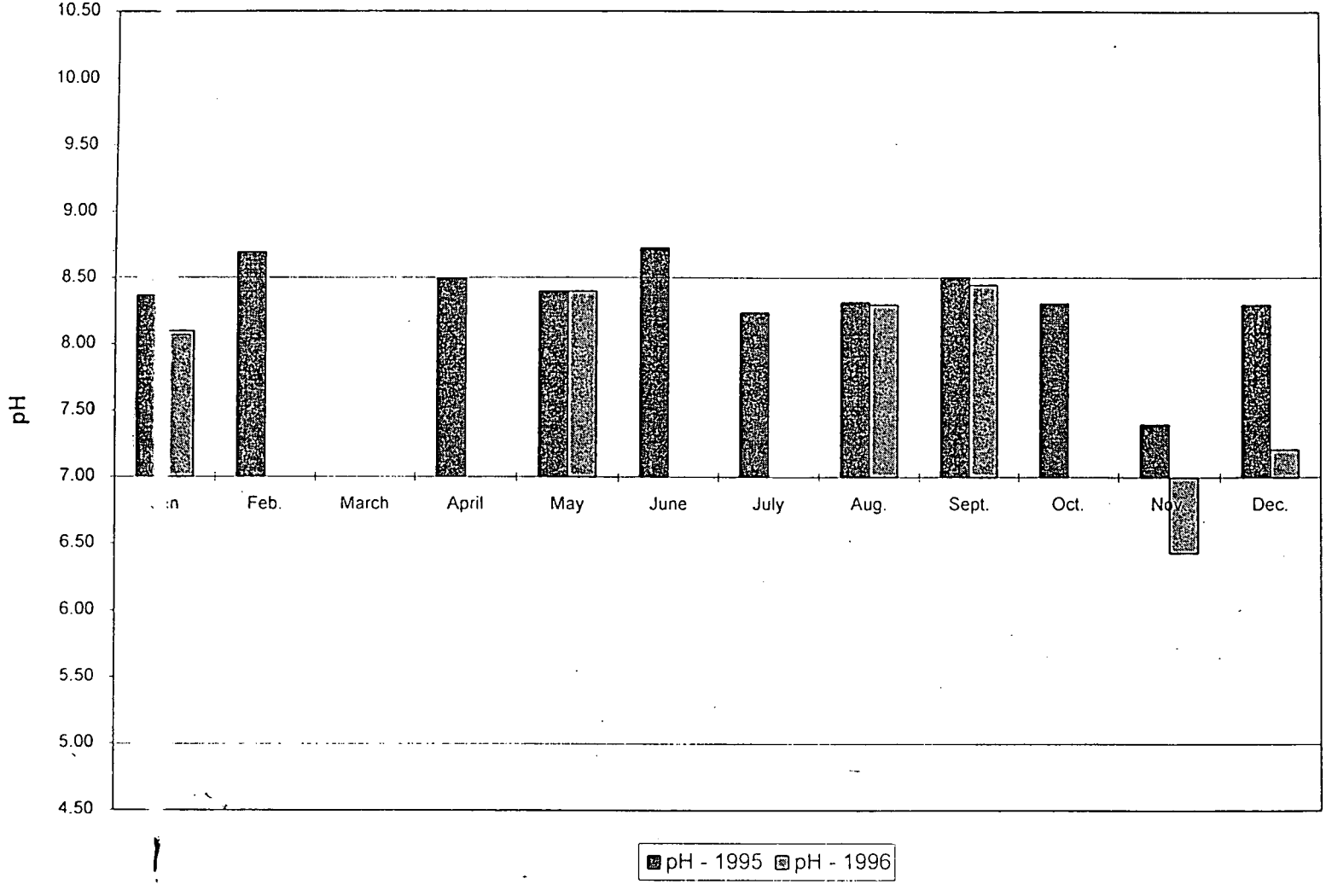
Variation of pH at Panagamuwa Wewa 1995 - 1996



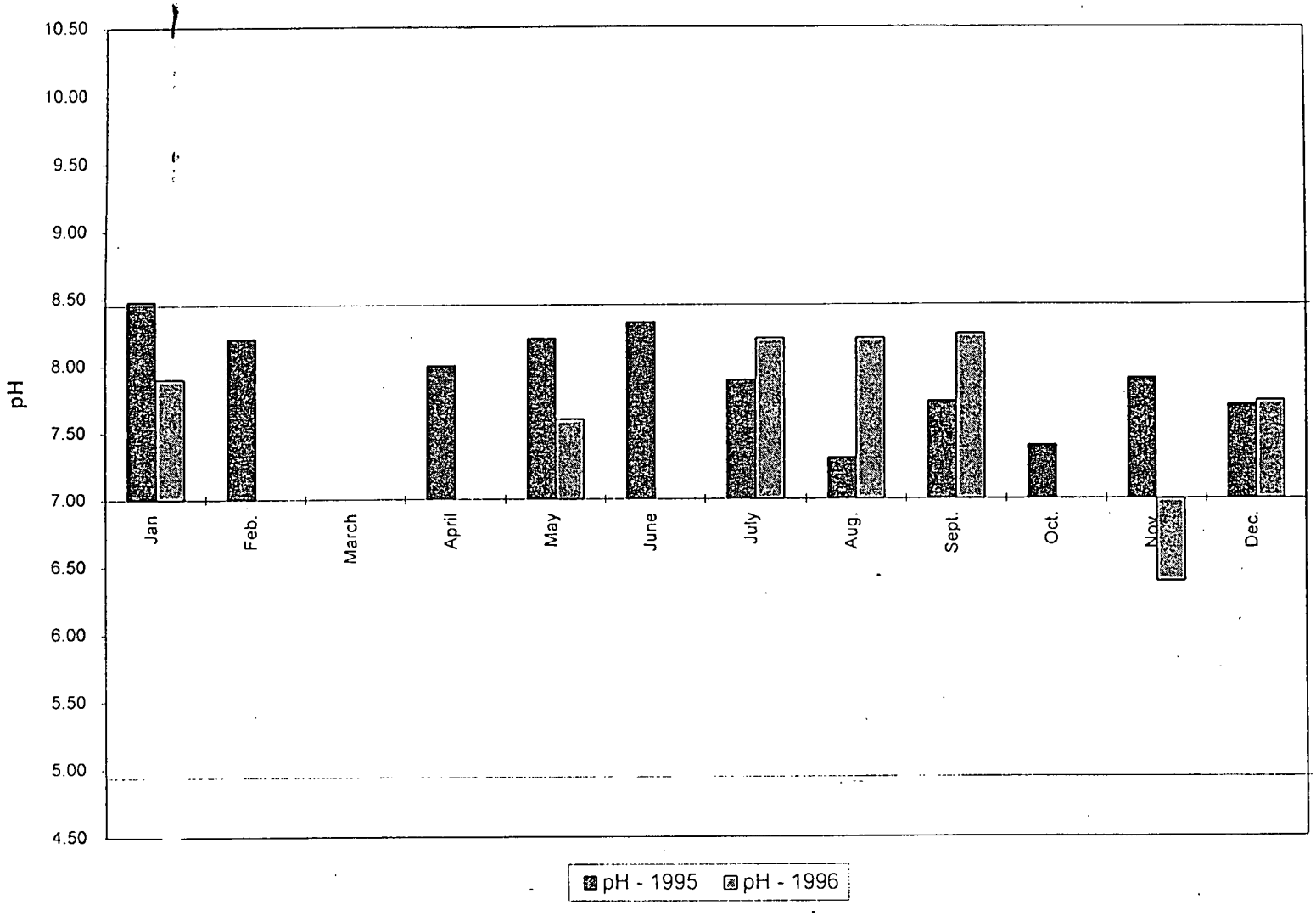
Variation of pH at Kurunegala Wewa 1995 - 1996



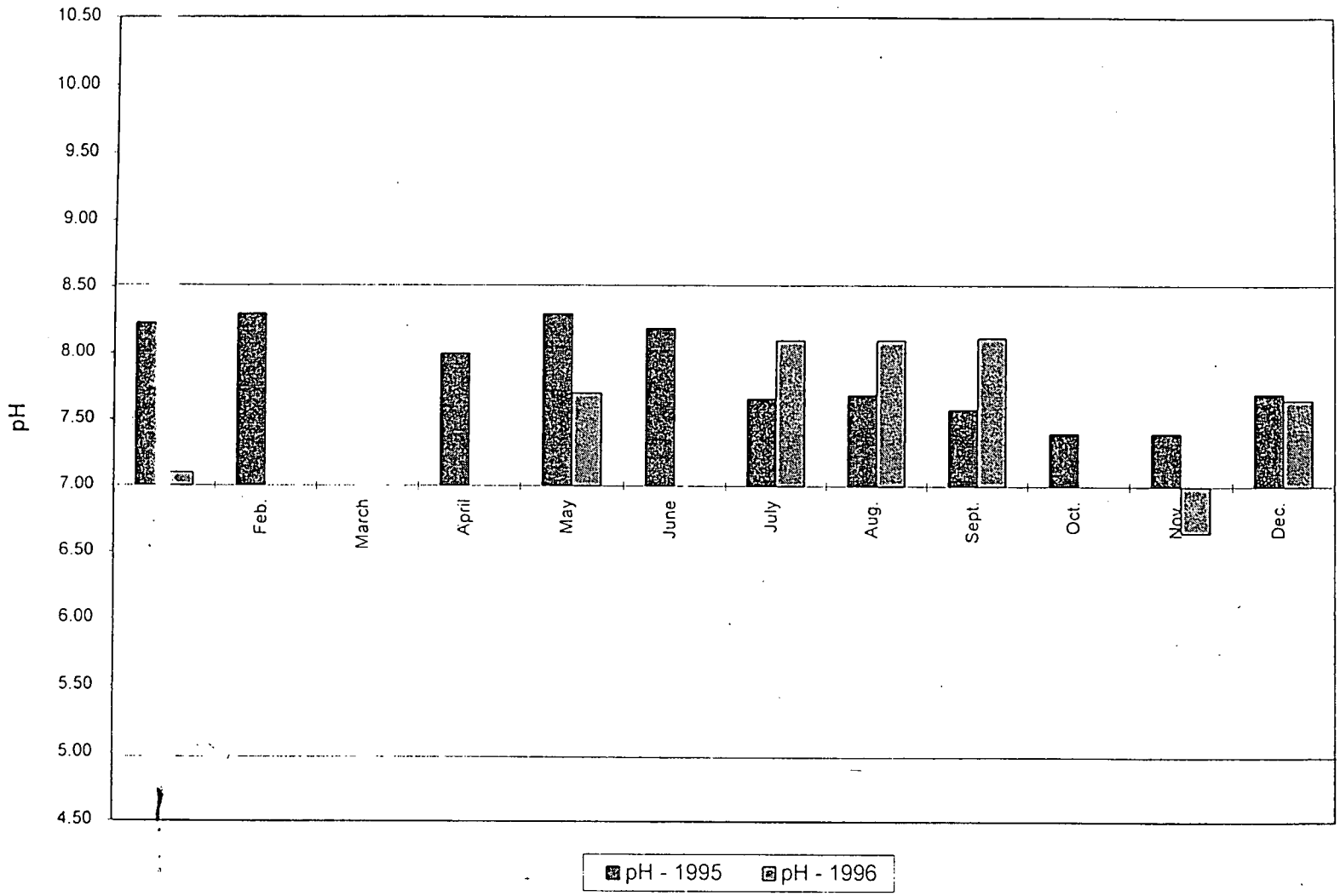
Variation of pH at Bathalegoda Wewa 1995 - 1996



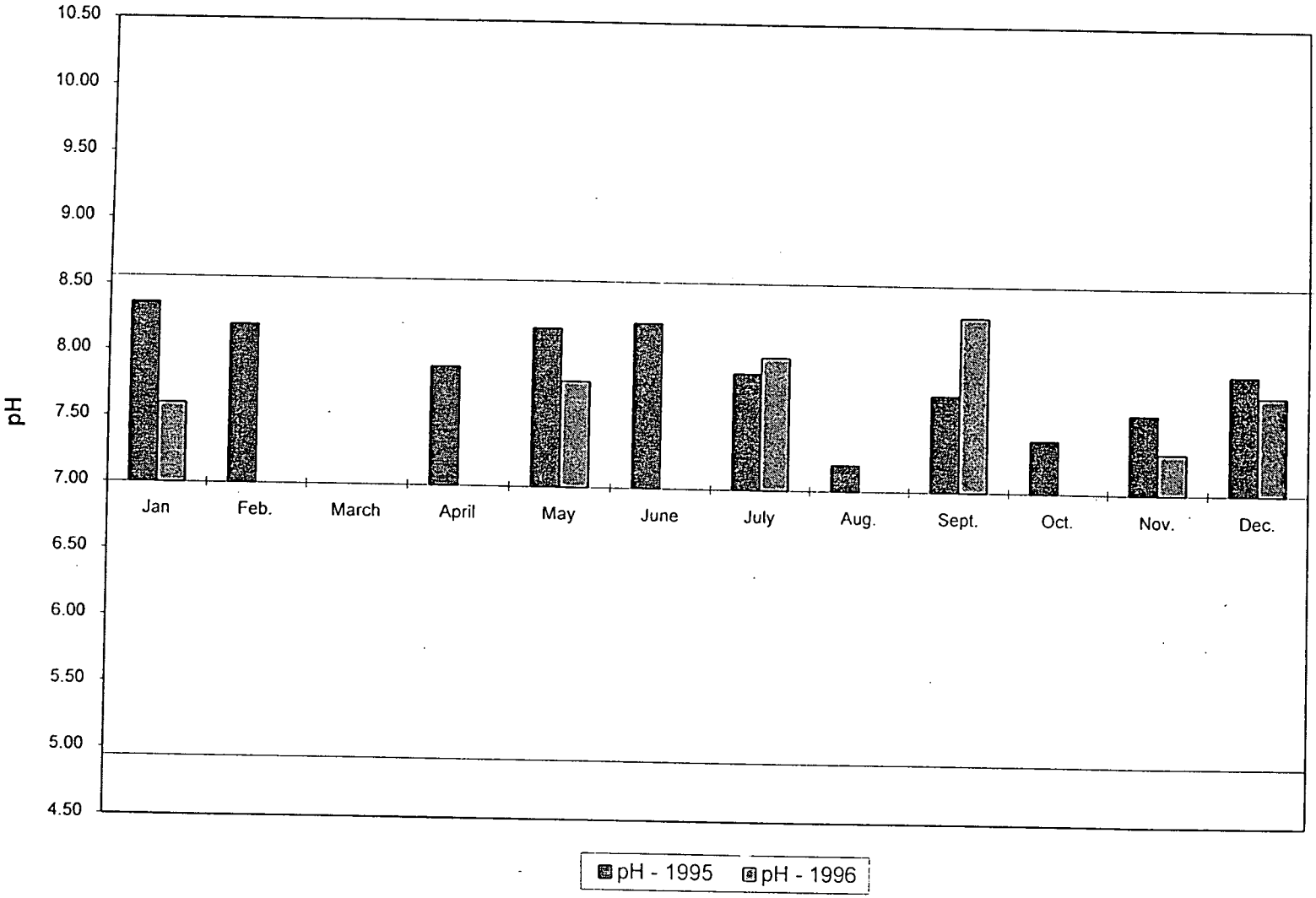
Variation of pH at Deduru Oya (5) 1995 - 1996



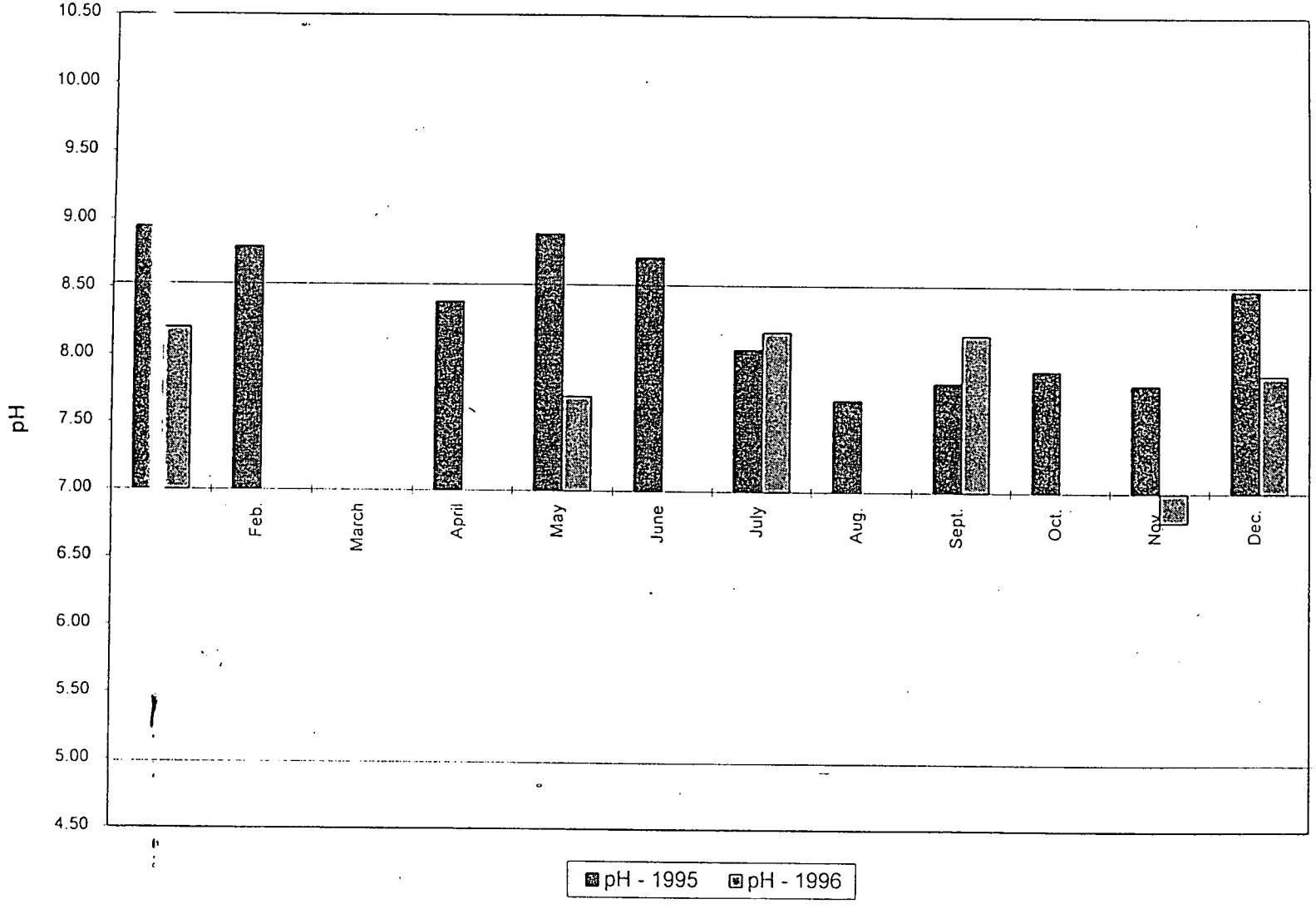
Variation of pH at Kospothu Oya 1995 - 1996



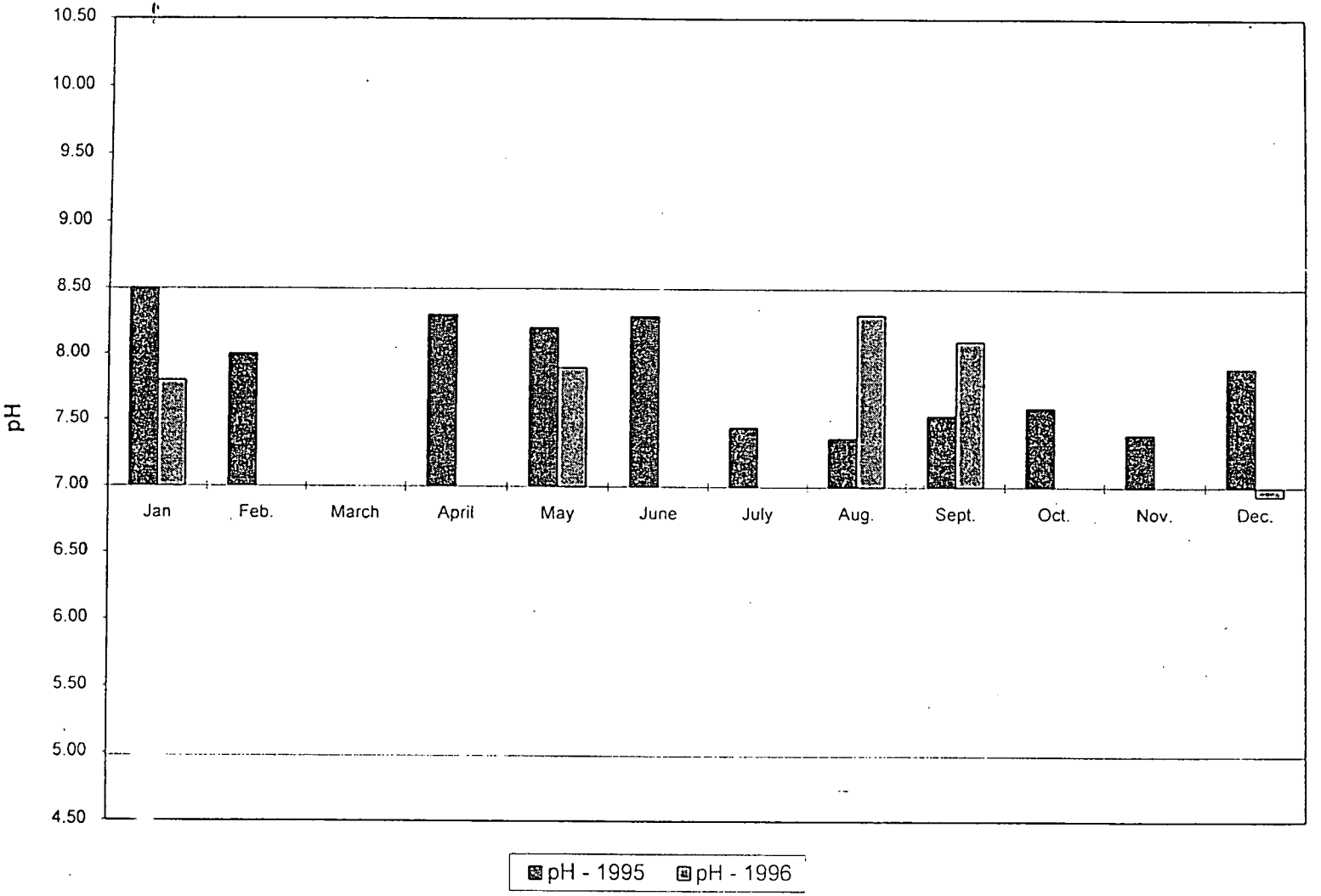
Variation of pH at Kuda Oya 1995 - 1996



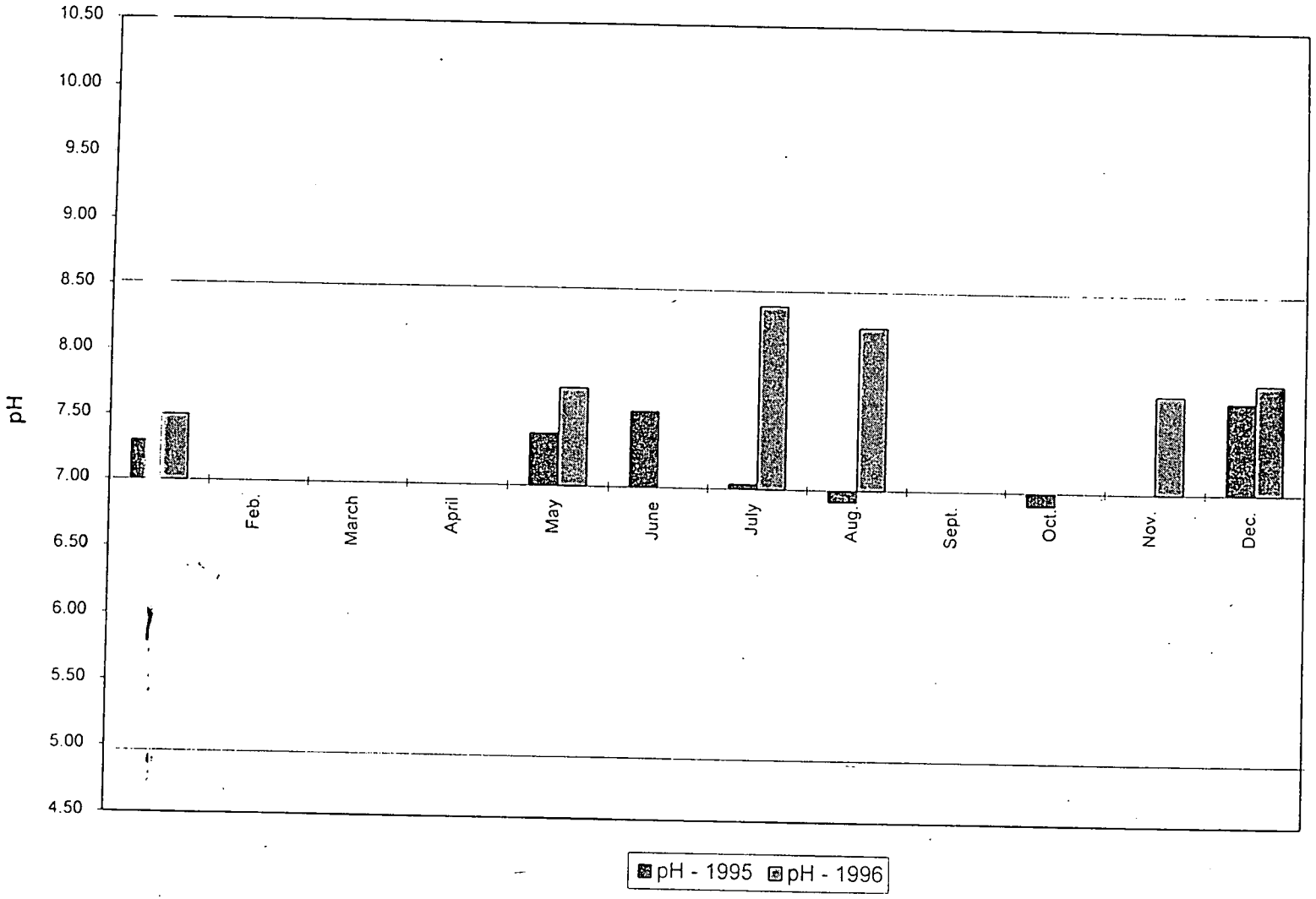
Variation of pH at Kimbulwana Oya (Spill Side) 1995-1996



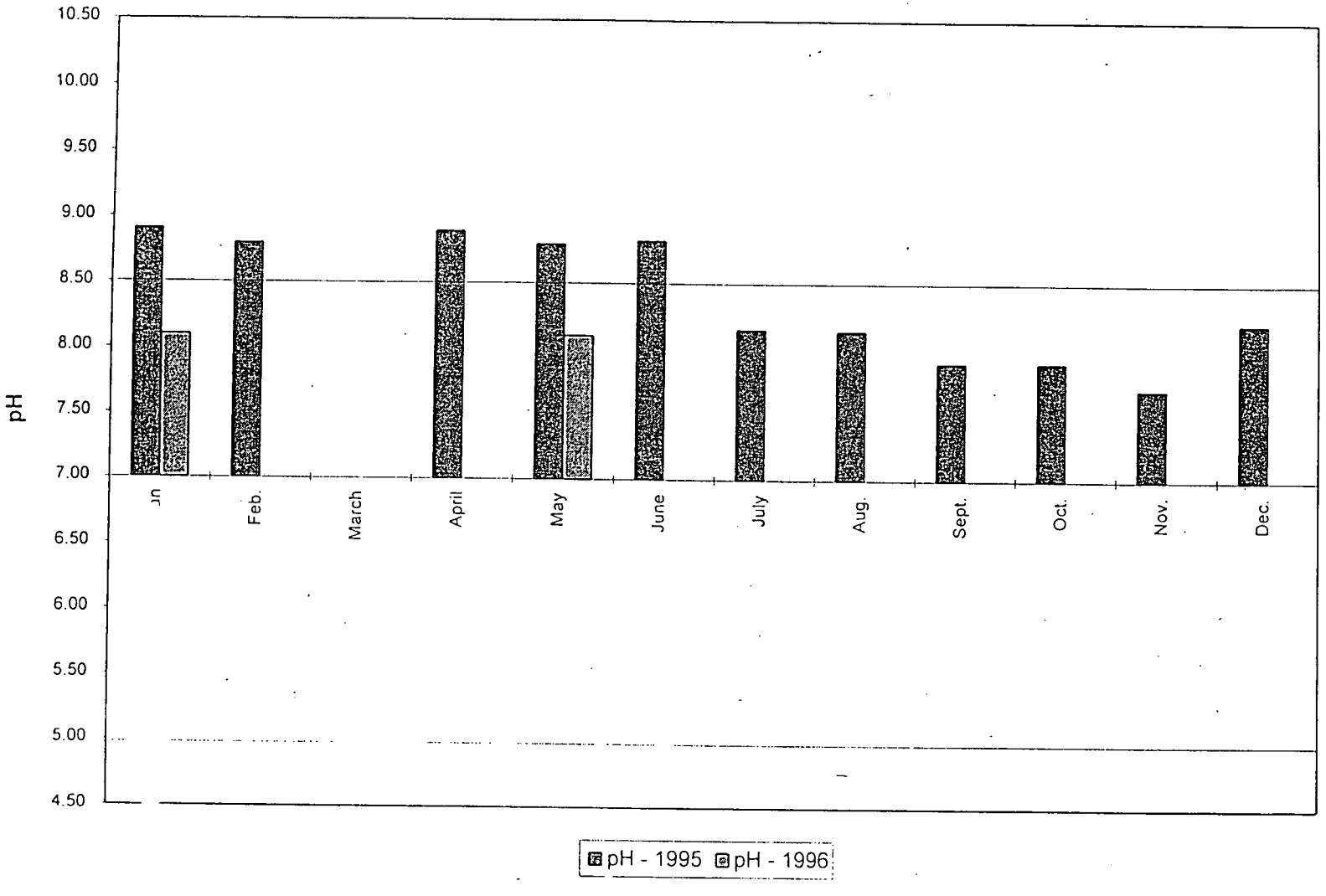
Variation of pH at Kimbulwana Oya (Anicat) 1995 - 1996



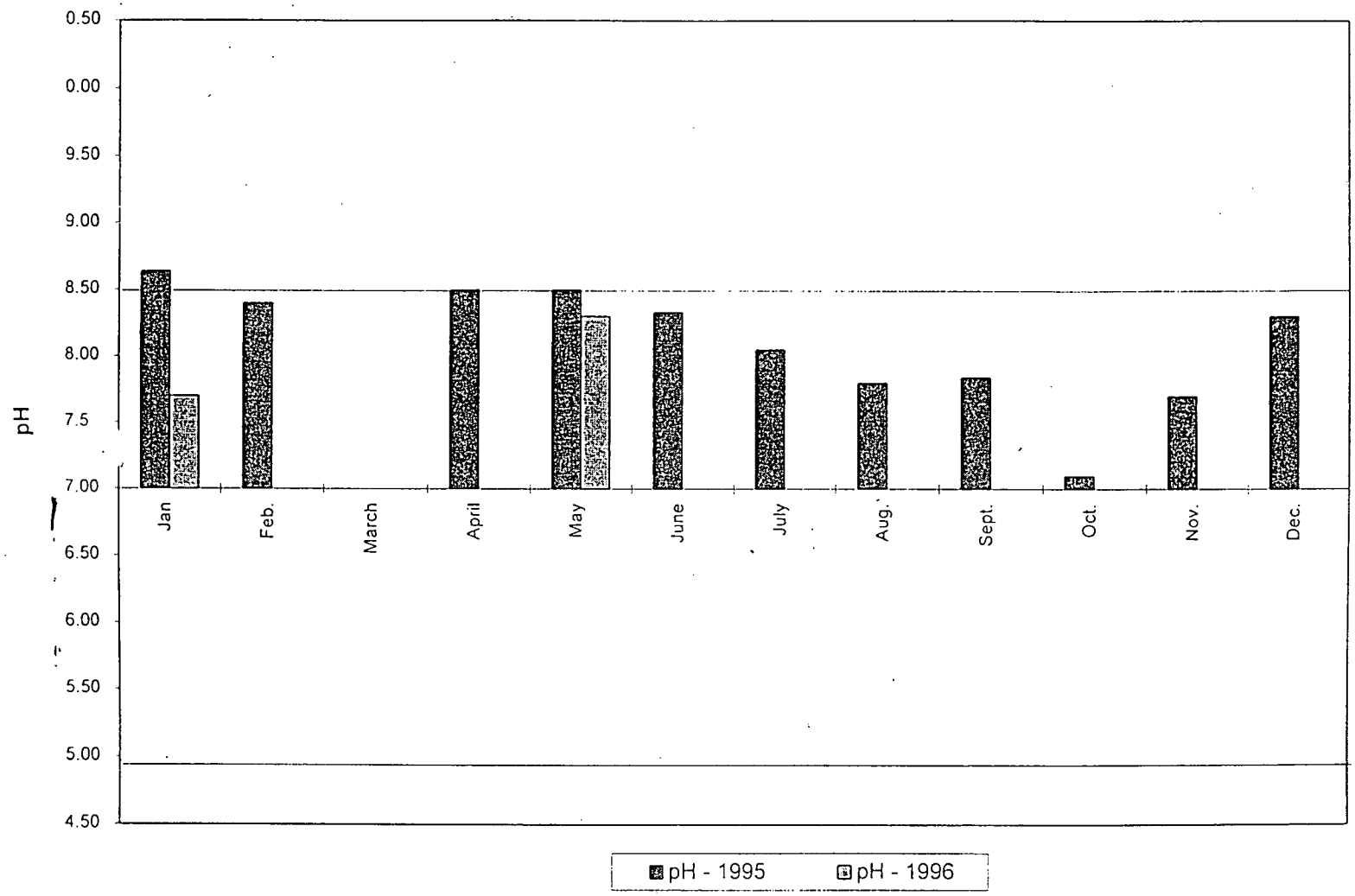
Variation of pH at Meddeketiya Wewa 1995 - 1996



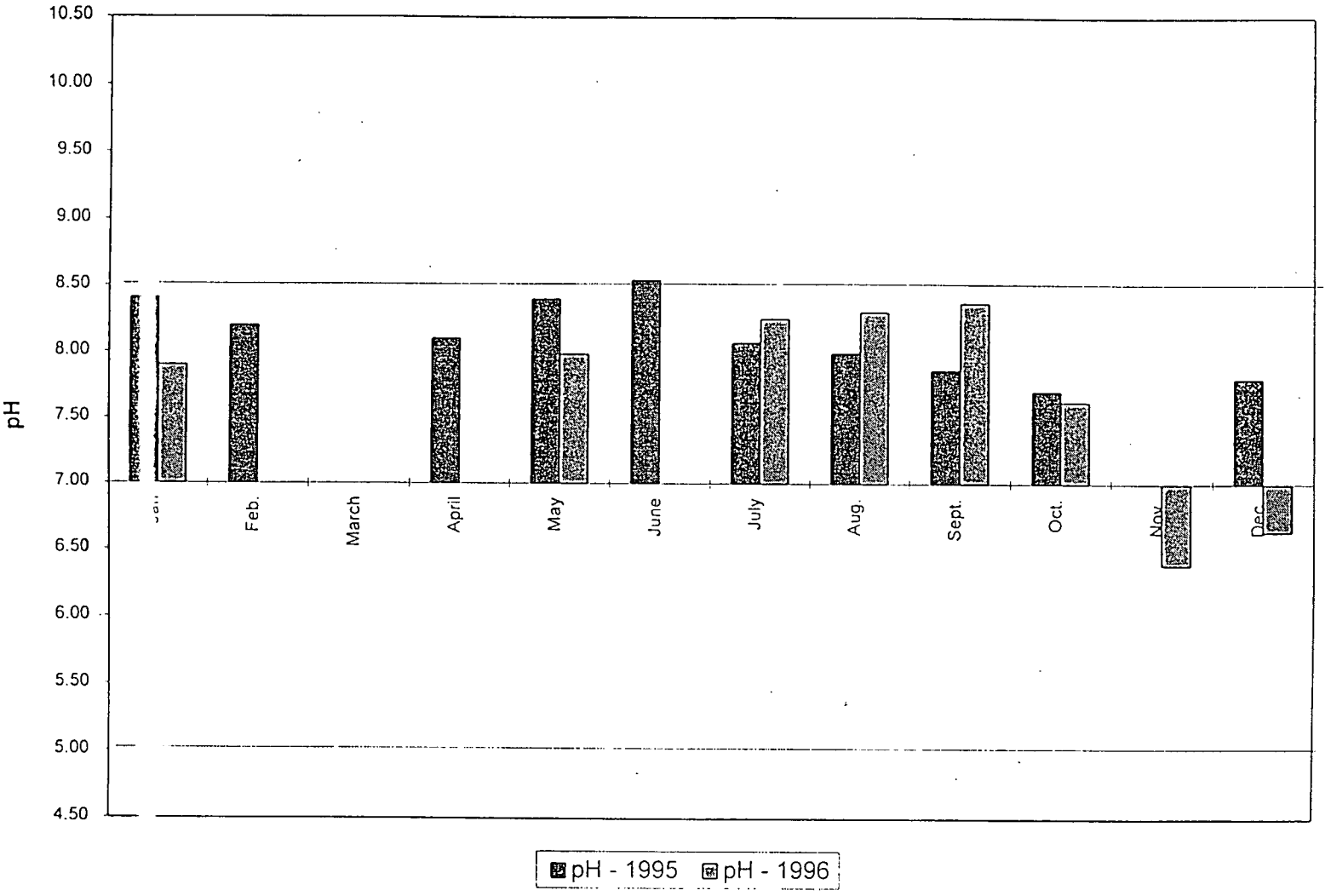
Variation of pH at Hakwatuna Wewa 1995 - 1996



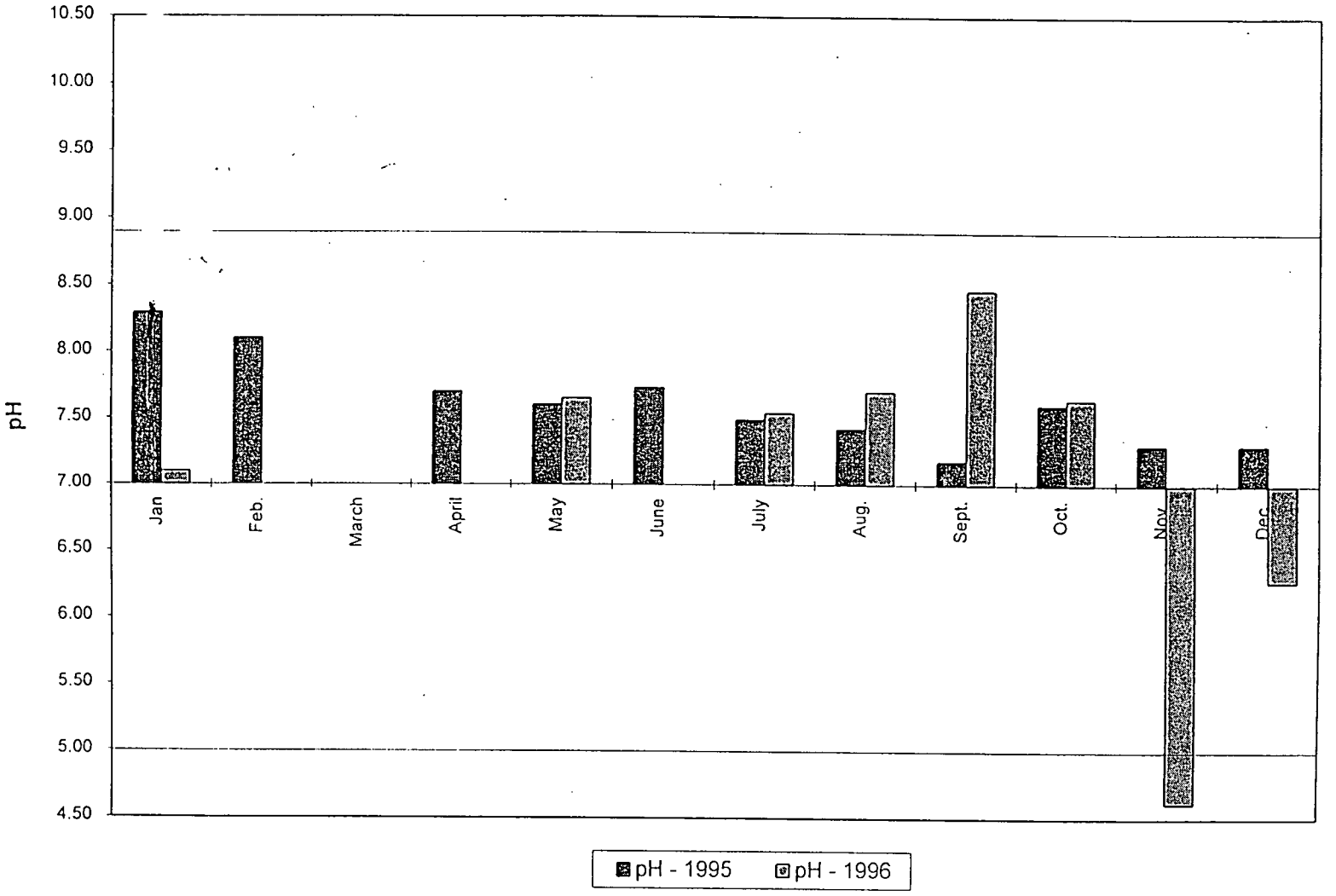
Variation of pH at Deduru Oya (1) 1995 - 1996



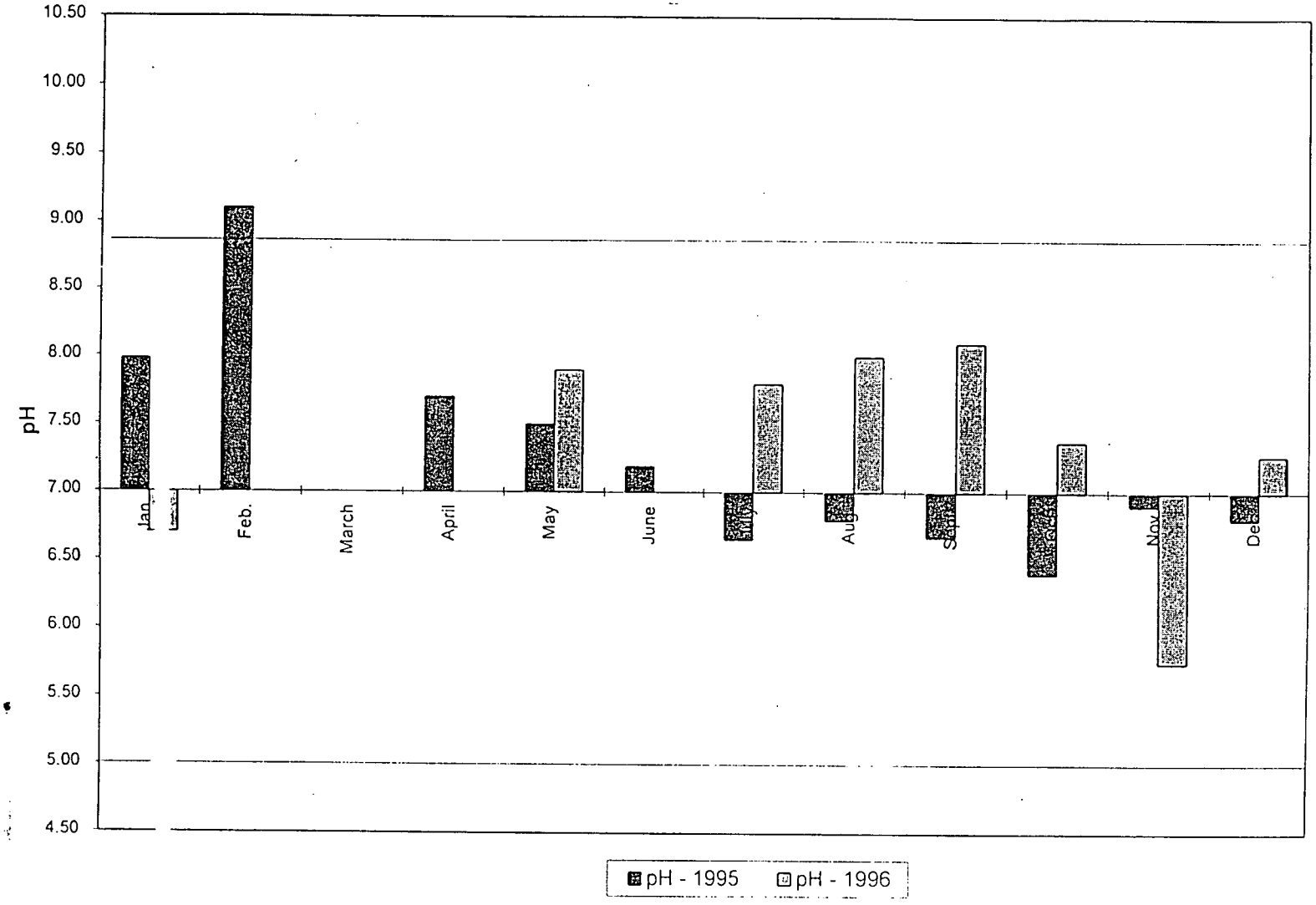
Variation of pH at Deduru Oya (21) 1995 - 1996



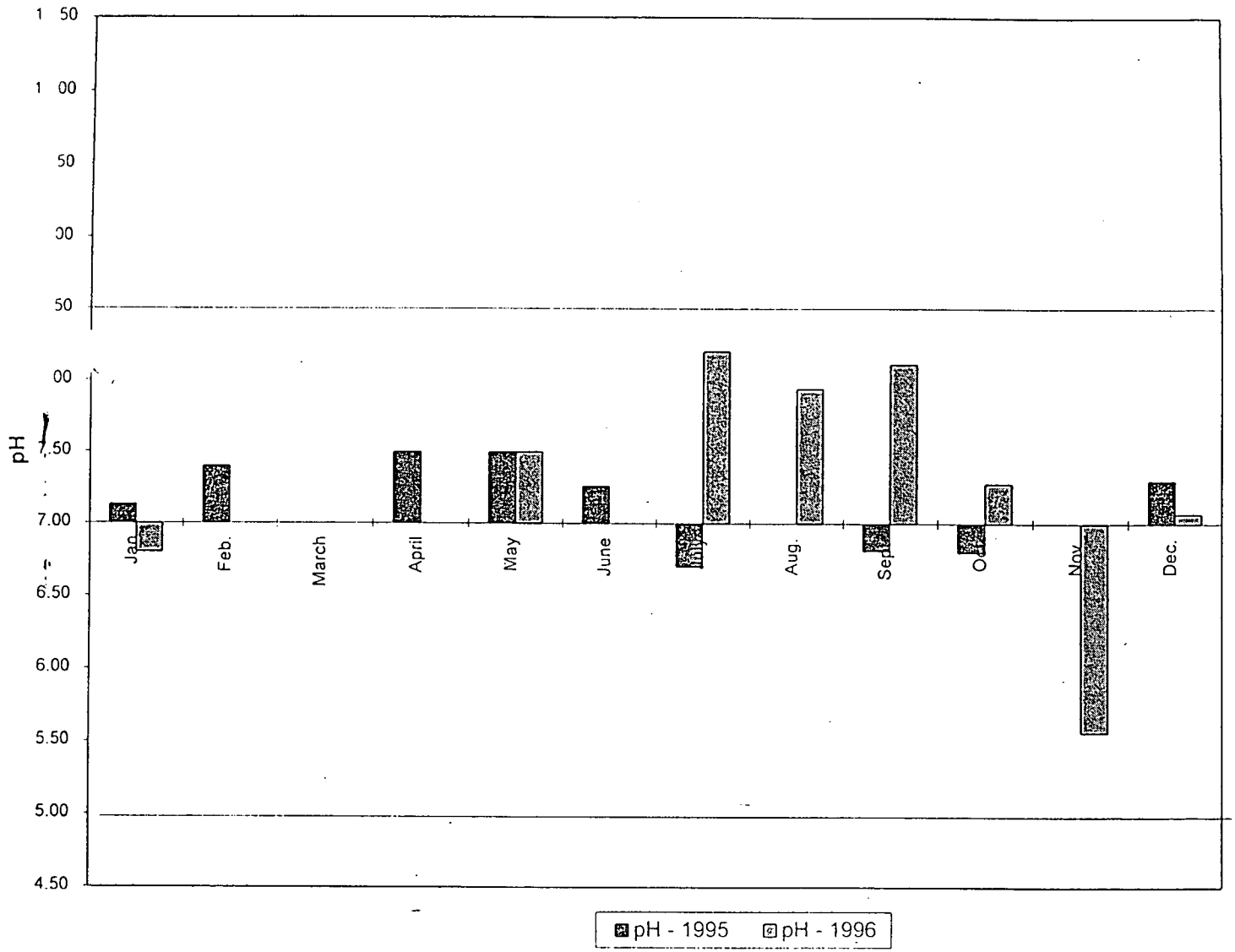
Variation of pH at Maguru Oya (22) 1995 - 1996



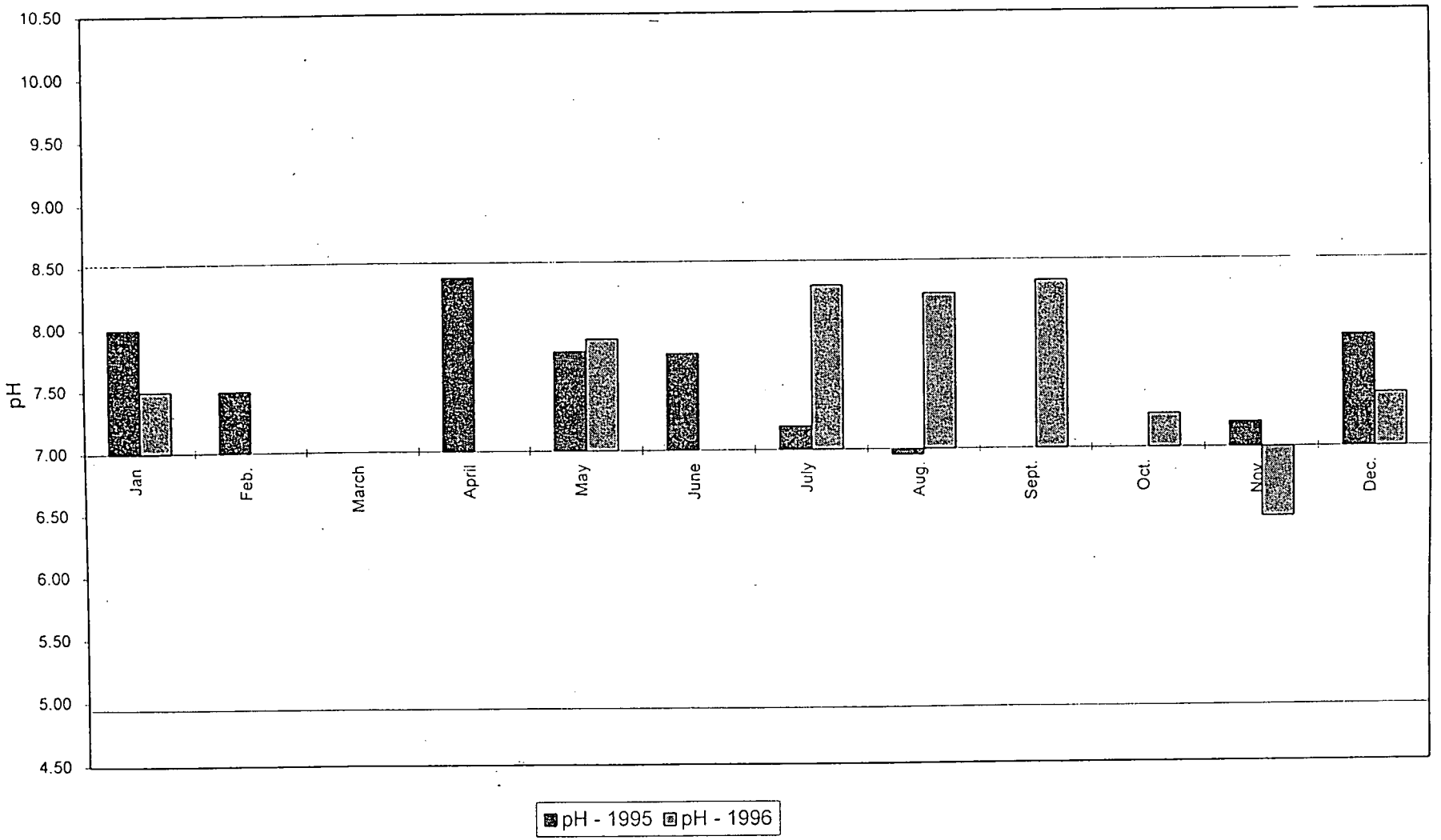
Variation of pH at Sangappali Wewa 1995 - 1996



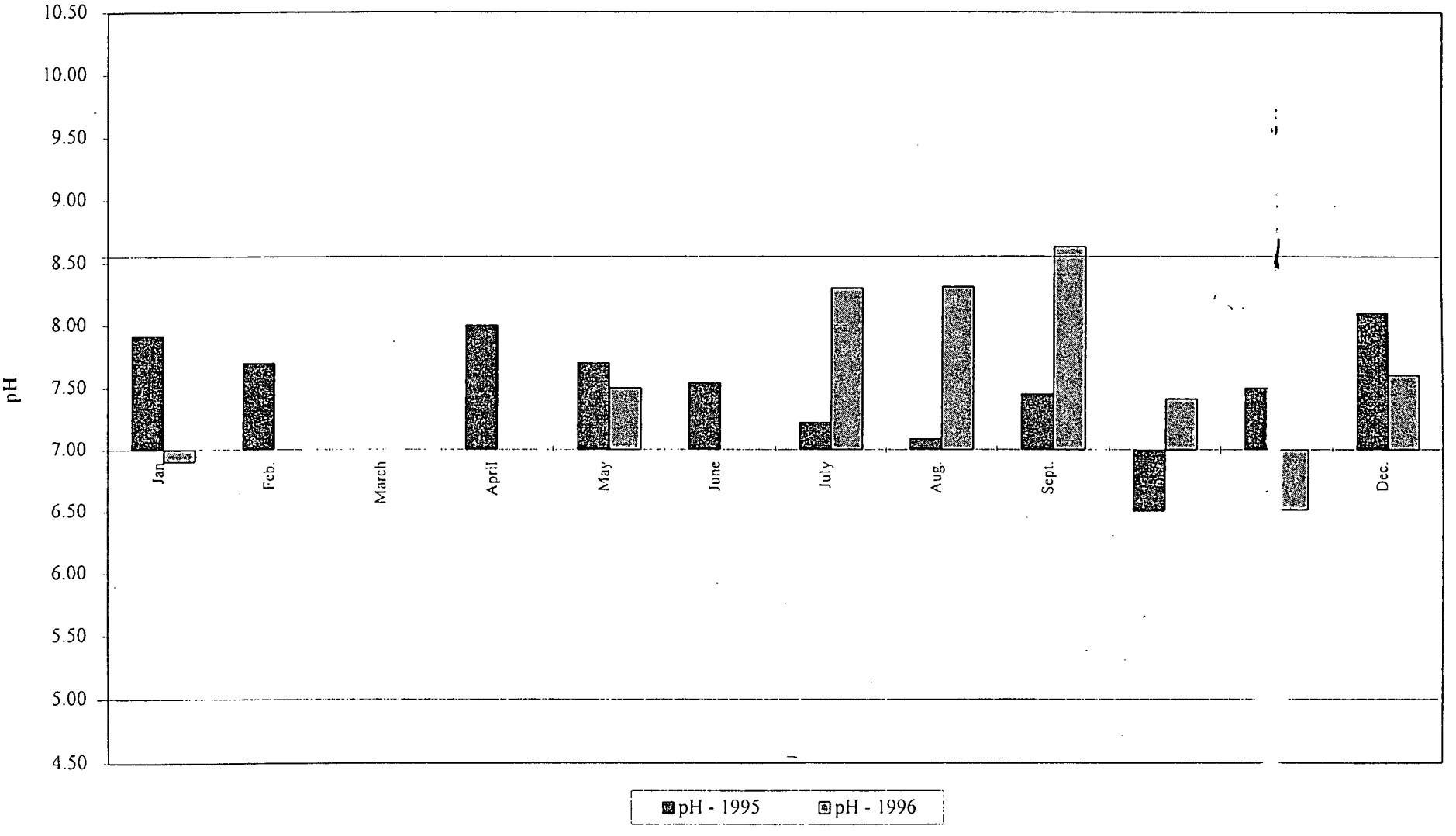
Variation of pH at Berithamannawa Wewa 1995 - 1996



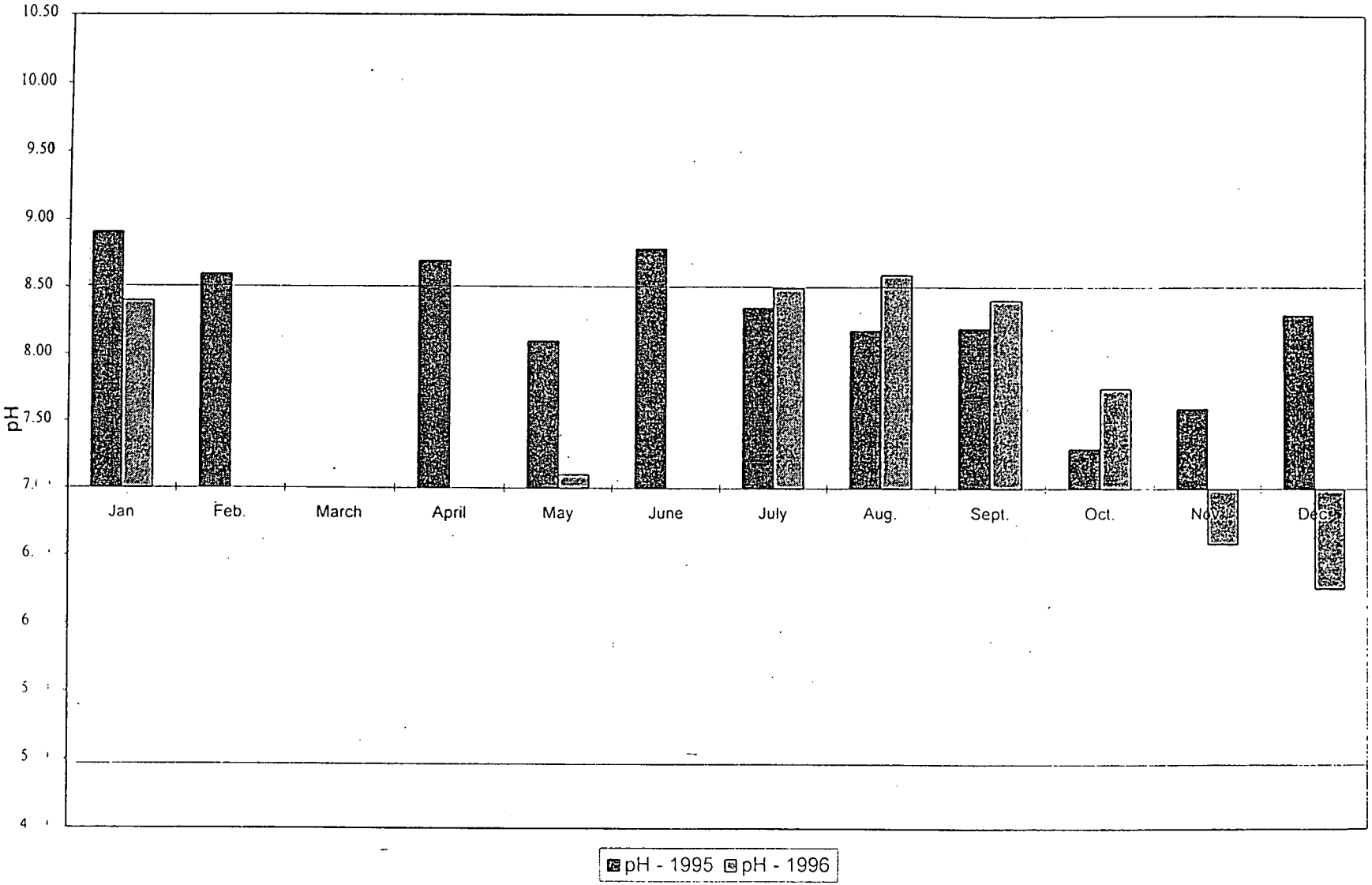
Variation of pH at Hidduwa Wewa 1995 - 1996



Variatrion of pH at Ahatu Wewa 1995 -1 996



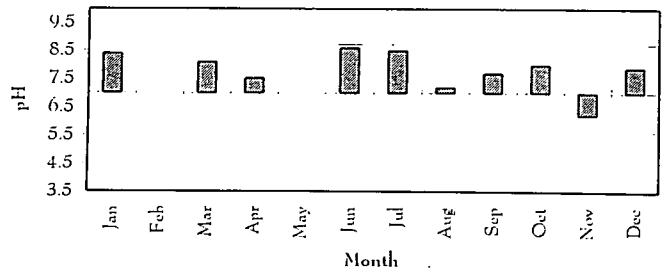
Variation of pH at Attragalla Wewa 1995 - 1996



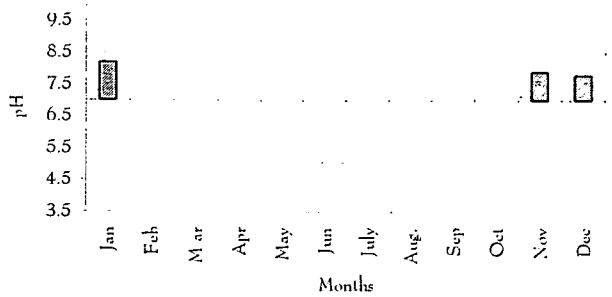
Surface Water Quality os selected Tanks and Rivers in North Western Province
Samle Collected and analyzed by CEA Alboratory Staff
Year 1997
Parameter pH

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Atthragalle Wewa	8.4	-	8.10	7.53	-	8.60	8.5	7.20	7.70	8.0	6.2	7.9	
Ahatu Wewa	8.2	_	8.00	2.13	_	8.40	7.6	7.80	-	-	7.9	7.9	
Hiddawa Wewa	8.2	-	-	-	-	-	-	-	-	-	7.9	7.8	
Berithamannawa wewa	7.9	-	7.60	6.80	-	7.80	8.0	7.60	7.70	7.5	7.3	7.4	
Sangappali wewa	7.9	_	7.60	7.75	_	7.90	7.7	7.40	7.40	7.7	6.8	7.7	
Andara Wewa	7.7	-	7.50	7.13	-	7.40	7.6	7.50	-	-	-	7.8	
Maguru Oya (22)	7.4	-	7.60	-	-	7.30	7.9	7.00	6.80	7.3	7.2	7.3	
Daduru Oya (21)	7.4	_	-	-	_	7.8	8.1	7.7	8.2	7.8	7.8	8	
Galagedara Aluthwewa	-	-	-	-	-	7.50	8.2	-	-	7.8	7.8	7.1	
Panagamuwa wewa	7.9	-	7.70	-	-	7.70	7.4	7.20	-	7.7	8.0	8.2	
Kurunegala Wewa	8.6	_	8.90	8.70	_	7.90	8.5	7.50	7.50	7.8	7.9	7.9	
Bathalagoda Wewa	8	-	7.20	8.10	-	8.40	8.4	8.20	7.10	7.5	7.7	7.7	
Daduru Oya (5)	8.1	-	6.00	8.84	-	8.3	8.0	7.9	8	8.2	8.0	7.6	
Kospothu Oya	7.8	_	6.90	8.20	_	8.30	7.9	7.70	6.80	7.4	7.4	7.1	
kuda Oya	7.9	-	7.50	-	-	8.4	8.1	7.6	6.9	8.4	8.0	7.6	
kibulwana Oya (Spill Si	-	-	7.60	8.40	-	8.30	8.0	7.50	7.40	8.5	7.9	7.7	
kibulwana Oya (Anicat)	-	_	7.40	8.60	_	8.30	7.9	7.60	6.90	8.3	7.9	7.6	
Maddeketiya wewa	-	-	7.40	8.15	-	8.40	8.1	7.70	6.90	8.4	8.0	7.6	
Hakwatuna Oya	-	_	7.20	8.00	_	8.40	8.4	-	6.80	-	8.1	-	
Daduru Oya (1)	-	-	7.70	-	-	8.40	8.2	7.90	7.40	8.2	7.9	7.6	

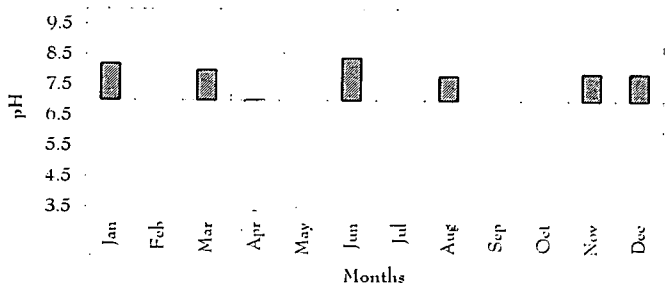
Variation of pH at Atthragalla Wewa in 1997



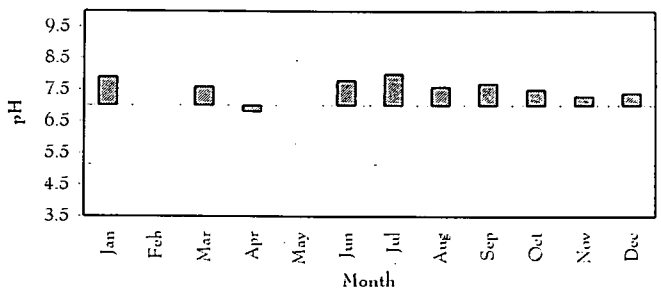
Variation of pH at Hiddawa Wewa in 1997



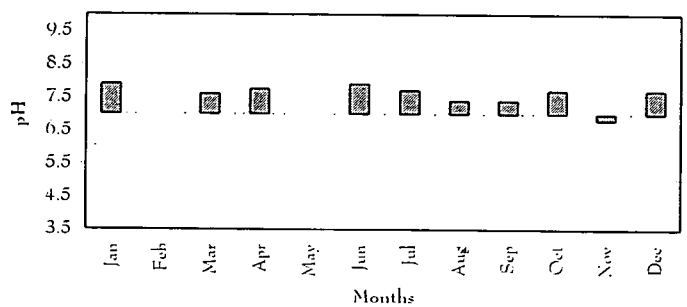
Variation of pH at Ahatu Wewa in 1997



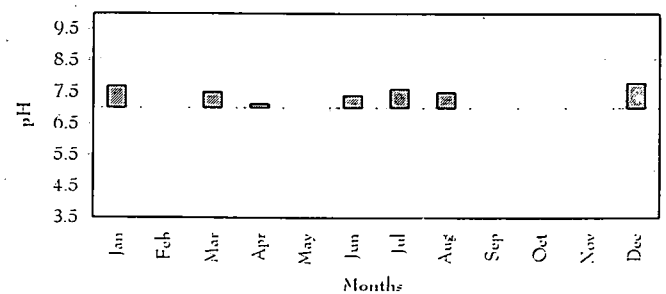
Variation of pH at Berithamannawa Wewa



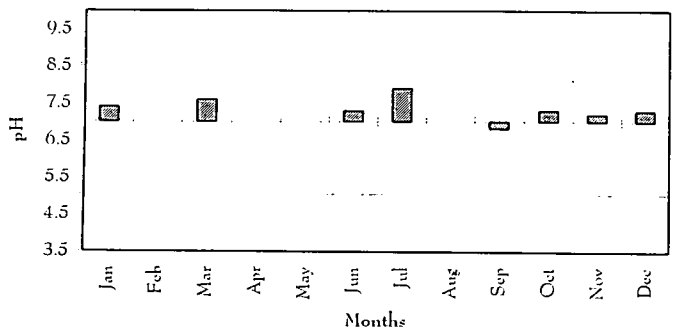
Variation of pH at Sangappali Wewa



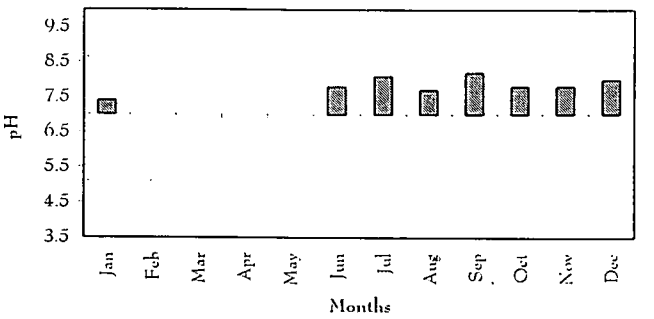
Variation of pH at Andara Wewa in 1997



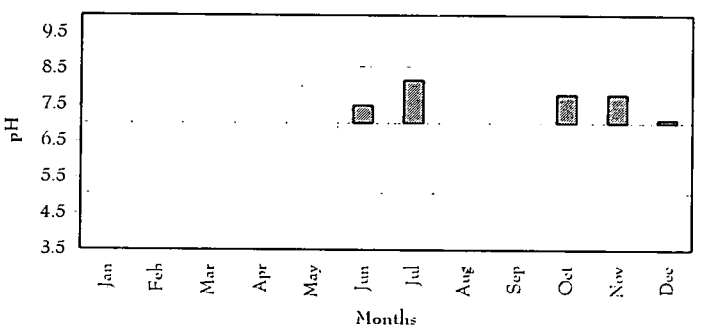
Variation of pH at Maguru Oya (22) in 1997



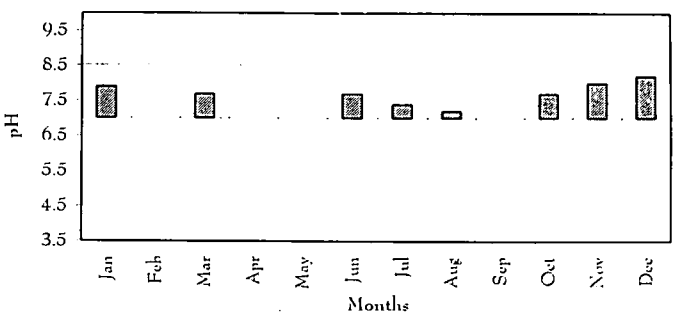
Variation of pH at Deduru Oya (21) in 1997



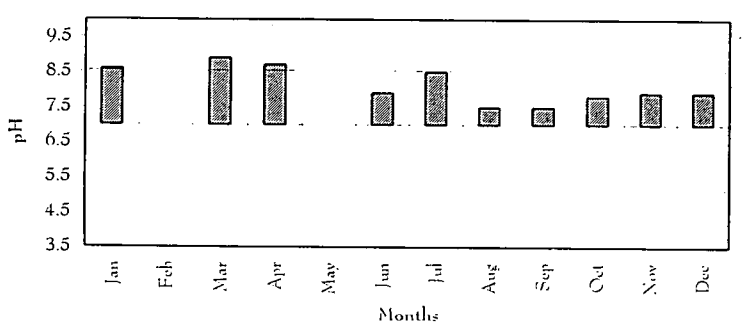
Variation of pH at Galagedara Althwewa in 1997



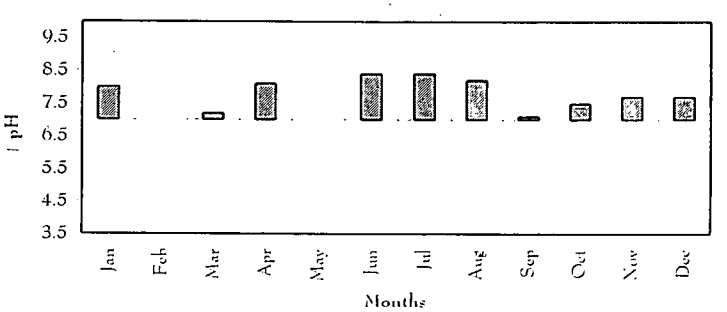
Variation of pH at Panagamuwa Wewa in 1997



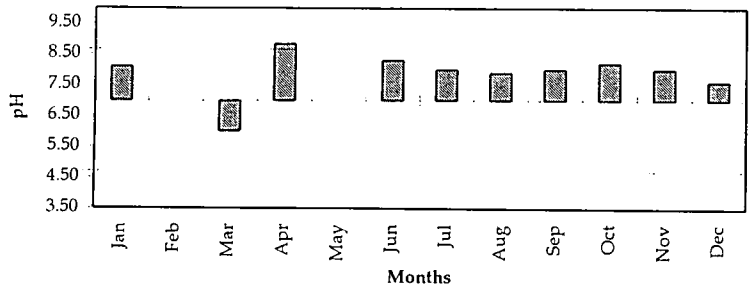
Variation of pH at Kurunegala wewa in 1997



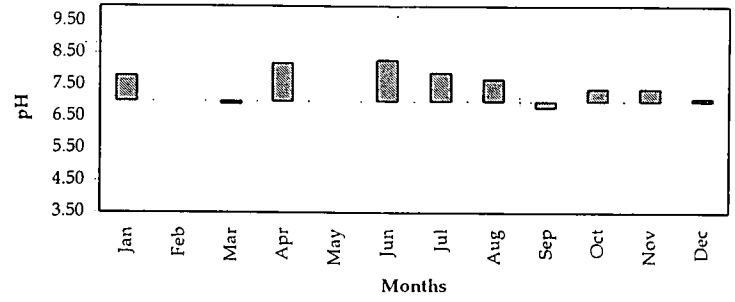
Variation og pH at Bathalegoda Wewa in 1997



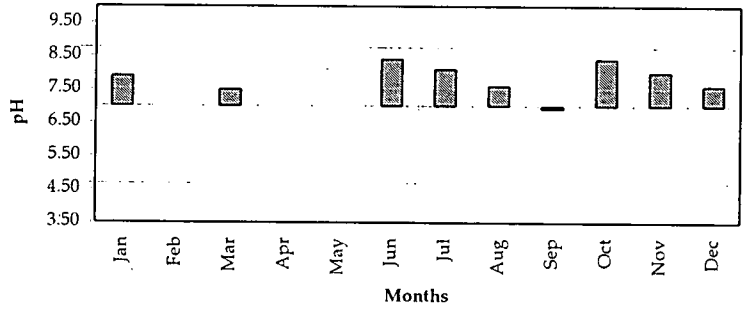
Variation of pH at Deduru Oya (5) in 1997



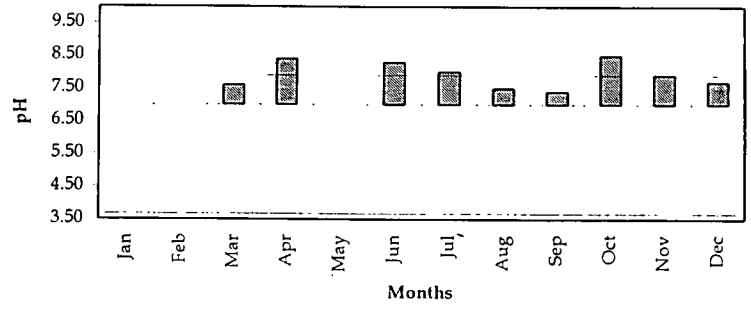
Variation of pH at Kospothu Wewa in 1997



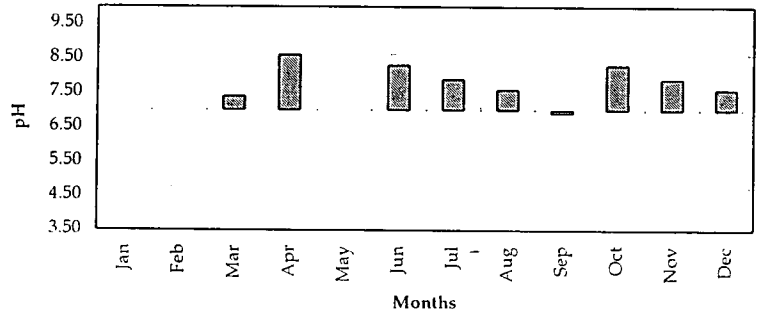
Variation of pH at Kuda Oya in 1997



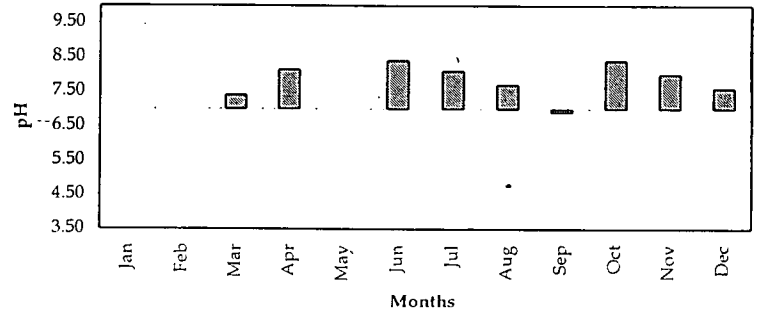
Variation of pH at Kimbulwana Oya (Spill Side) in 1997

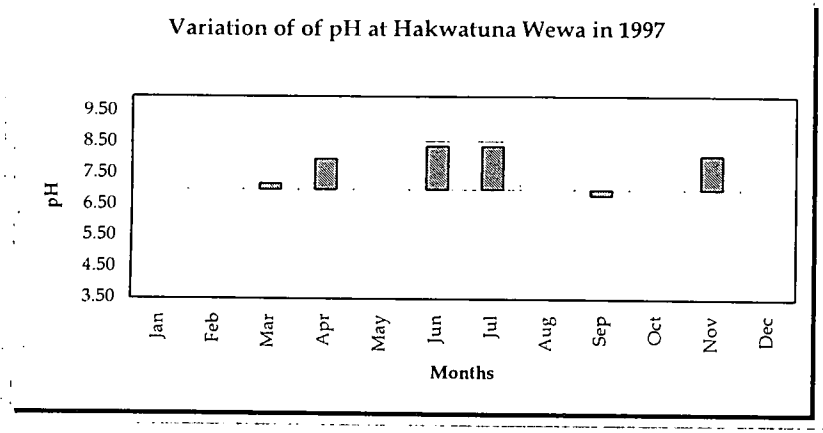


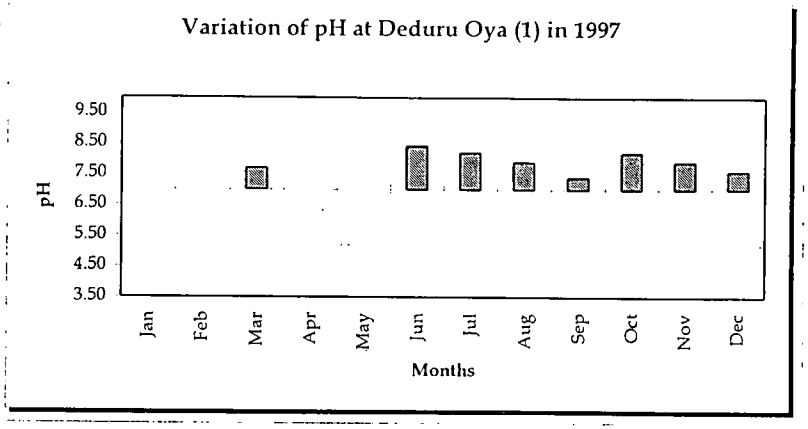
Variation of pH at Kimbulwana Oya (Anicat side) in 1997



Variation of pH at Meddeketiya Wewa in 1997




Variation of of pH at Hakwatuna Wewa in 1997
pH
9.50
8.50
7.50
6.50
5.50
4.50
3.50
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Months


Variation of pH at Deduru Oya (1) in 1997
pH
9.50
8.50
7.50
6.50
5.50
4.50
3.50
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Months

Annexure X

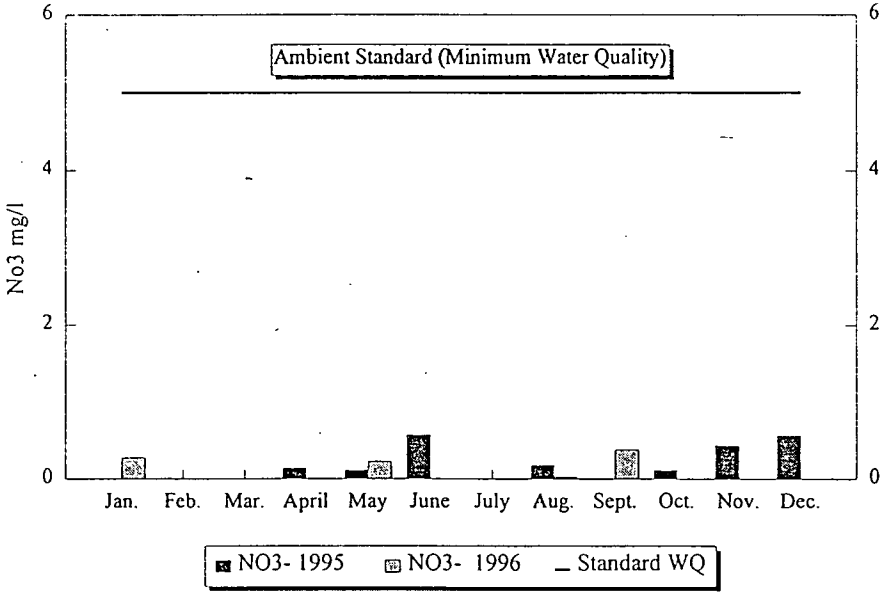
Nitrate (NO_3^-) levels of Surface Water Samples in North Western Province during 1995 -1997.

Surface Water Quality of selected Tanks and Rivers in North Western Province
Samples collected and analyzed by CEA Laboratory
Year : 1995 and 1996

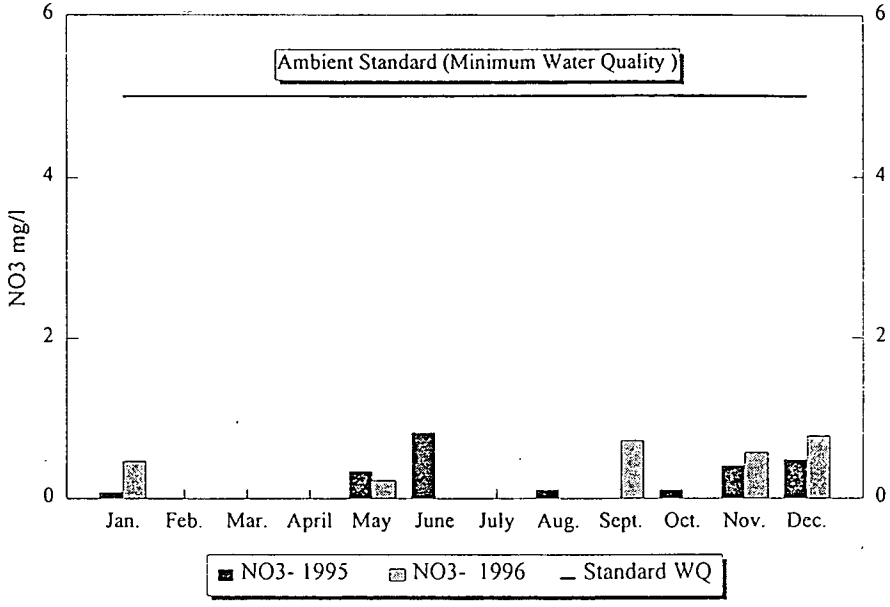
Parameter NO3 mg/l

Tanks		Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Atthragalle Wewa	NO3- 1995	0.113	0.000		0.422	0.469	0.133	0.019	0.000	0.000	0.112	0.032	0.697
	NO3- 1996	0.022				0.6646		0.79	0.069	0.5	0.005	0.12	0.379
Ahatu Wewa	NO3- 1995	0.019	0.000		0.979	0.182	0.226	0.000	0.000	0.302	0.322	0.005	0.390
	NO3- 1996	0.344				0.826		0.137	0.03	0.92	0.009	-	0.14
Hiddawa Wewa	NO3- 1995	0.140	0.000		0.000	0.000	0.493	0.106	0.000	1.930		0.116	0.480
	NO3- 1996	0.167				Nil		0.168	0.05	0.59	0.45	0.21	0.35
Berithamannawa wewa	NO3- 1995	0.005	0.005		0.798	0.167	0.373	0.000	1.270	0.783	0.563	0.242	0.607
	NO3- 1996	0.21				0.634		0.361	0.044	0.38	0.29	0.03	0.413
Sangappali wewa	NO3- 1995	0.000	0.000		0.304	0.260	0.199	0.250	0.171	0.304	0.023	0.362	0.456
	NO3- 1996	0.215				0.492		0.167	0.16	0.44	0.45	Nil	Nil
Andara Wewa	NO3- 1995	0.149	0.000		0.259	0.154	0.491	0.002	0.035	0.636	0.559	0.158	0.923
	NO3- 1996	1.915				0.646		0.291	0.64	0.45	0.42	Nil	0.11
Maguru Oya (22)	NO3- 1995	0.108	0.038		0.319	0.229	0.491	0.000	0.230	0.121	0.329	0.468	0.757
	NO3- 1996	0.323				0.404		0.059	0.015	0.66	0.68	0.14	0.958
Daduru Oya (21)	NO3- 1995	0.206			0.077	0.000	0.343	0.033	0.147	0.000	0.247	0.302	0.574
	NO3- 1996	0.21				0.663		0.229	0.223	0.44	0.49	0.46	0.583
Galagedara Aluthwewa	NO3- 1995	0.474	0.030		0.559	0.468	0.403	0.189	0.000	1.236	0.814	0.324	1.416
	NO3- 1996	-				0.586		- Dry			0.76	0.364	0.561
Panagamuwa wewa	NO3- 1995	0.018	0.034		0.304	0.502	0.012	0.257	2.660	0.000	0.272	0.602	0.245
	NO3- 1996	0.692				0.349		0.212	0.201	0.8	0.6	0.062	0.47
Kurunegala Wewa	NO3- 1995	0.047	0.000		0.079	0.000	0.086	0.000	0.209	0.000	0.023	0.124	0.217
	NO3- 1996	0.227				0.345		0.548	0.541	0.62	0.45	0.18	0.489
Bathalagoda Wewa	NO3- 1995	0.000	0.000		0.017	0.561	0.100	0.000	0.012	0.021	0.000	0.242	0.128
	NO3- 1996	0.287				0.159		- Nil		0.5	0.34	0.23	Nil
Daduru Oya (5)	NO3- 1995	0.000	0.003		0.139	0.110	0.574	0.000	0.183	0.000	0.110	0.438	0.574
	NO3- 1996	0.274				0.226		Nil	0.023	0.38	-	Nil	Nil
Kospothu Oya	NO3- 1995	0.079	0.002		0.000	0.344	0.823	0.000	0.110	0.000	0.108	0.408	0.485
	NO3- 1996	0.467				0.225		Nil	Nil	0.72	-	0.57	0.775
kuda Oya	NO3- 1995	0.000	0.017		0.074	0.110	0.448	0.213	0.179	0.000	0.000	0.408	0.698
	NO3- 1996	0.287				0.766		0.105	0.21	0.42	-	Nil	0.711
kibulwana Oya (Spill Side)	NO3- 1995	0.000	0.000		0.000	0.739	0.041	0.000	0.000	0.000	0.128	0.168	0.104
	NO3- 1996	0.134				0.026		0.185	0.018	1.1	-	Nil	0.095
kibulwana Oya (Anicat)	NO3- 1995	0.000	0.000		0.000	0.715	0.103	0.889	0.000	0.000	0.000	0.423	0.458
	NO3- 1996	0.452				0.574		0.602	-	0.91	-	0.12	0.623
Maddeketiya wewa	NO3- 1995	0.515	0.006			0.697	0.251	0.000	0.470		0.000	0.242	0.216
	NO3- 1996	0.107				0.652		Nil Dry		0.47	-	0.063	0.38
Hakwatuna Oya	NO3- 1995	0.153	0.000		0.000	0.561	0.341	0.000	0.000	0.000	0.140	0.167	0.338
	NO3- 1996	0.562				0.407		-	0.123	0.46	-		0.11
Daduru Oya (1)	NO3- 1995	0.000	0.000		0.017	0.499	0.703	0.335	0.112	0.103	0.319	0.422	0.443
	NO3- 1996	0.359				0.344		0.135	0.135	0.44	-	0.24	0.711

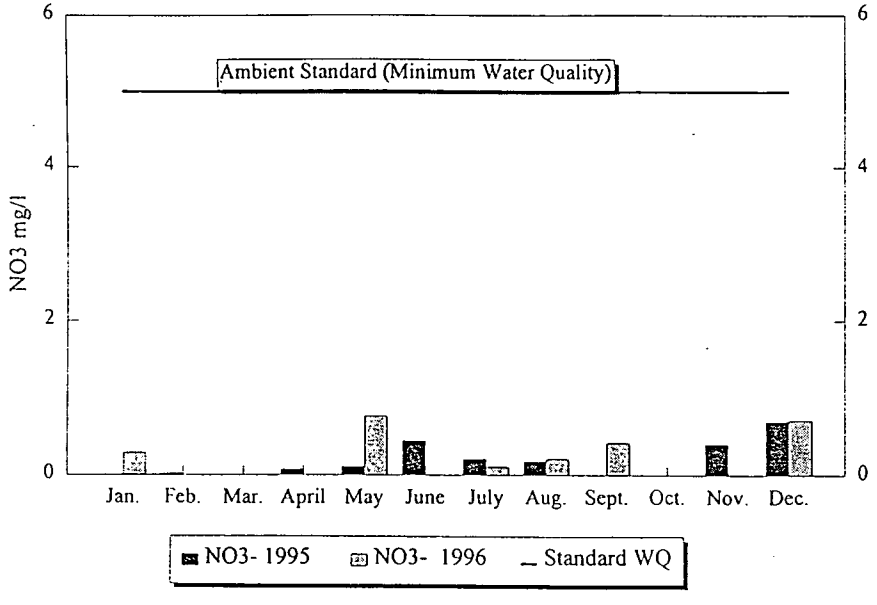
Variation of Nitrates at Deduru Oya (5) 1995 -1996



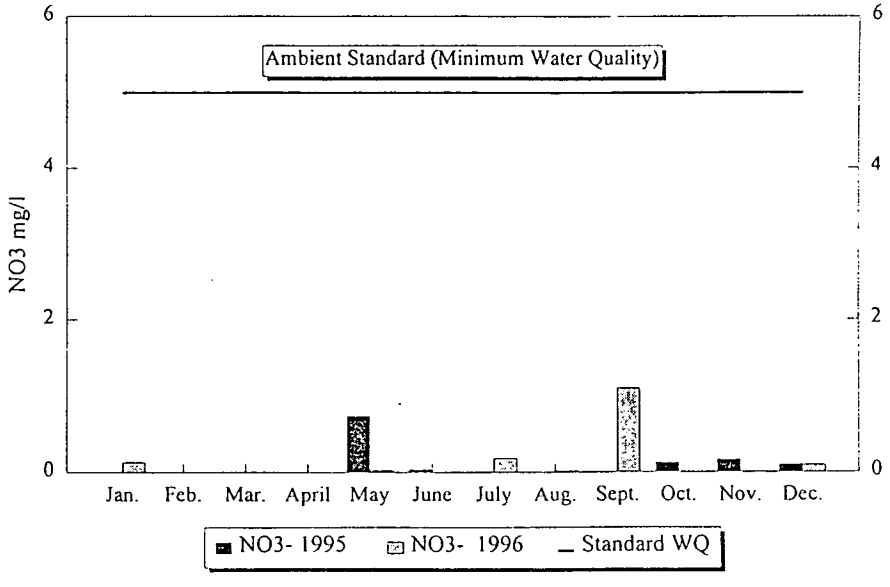
Variation of Nitrates at Kospothu Oya 1995 - 1996



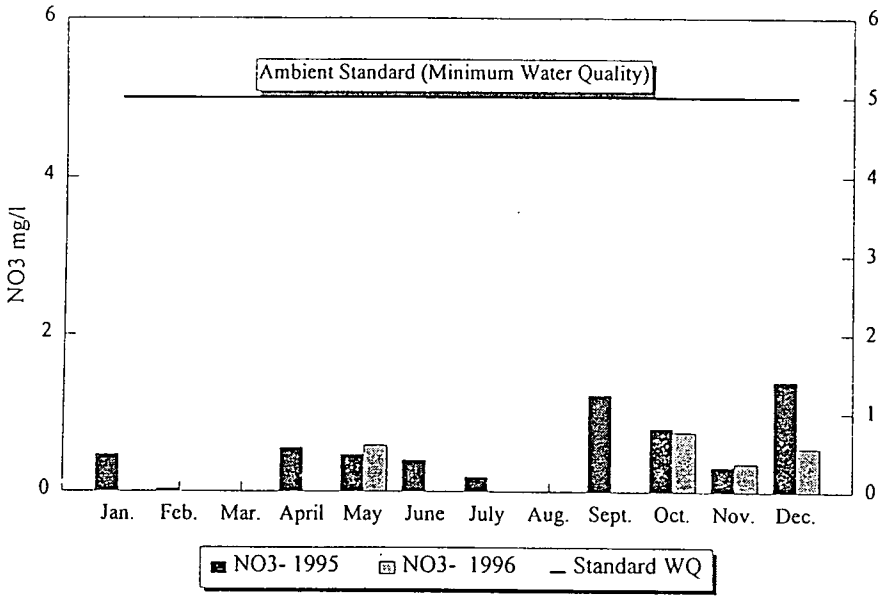
Variation of Nitrates at Kuda Oya 1995 - 1996



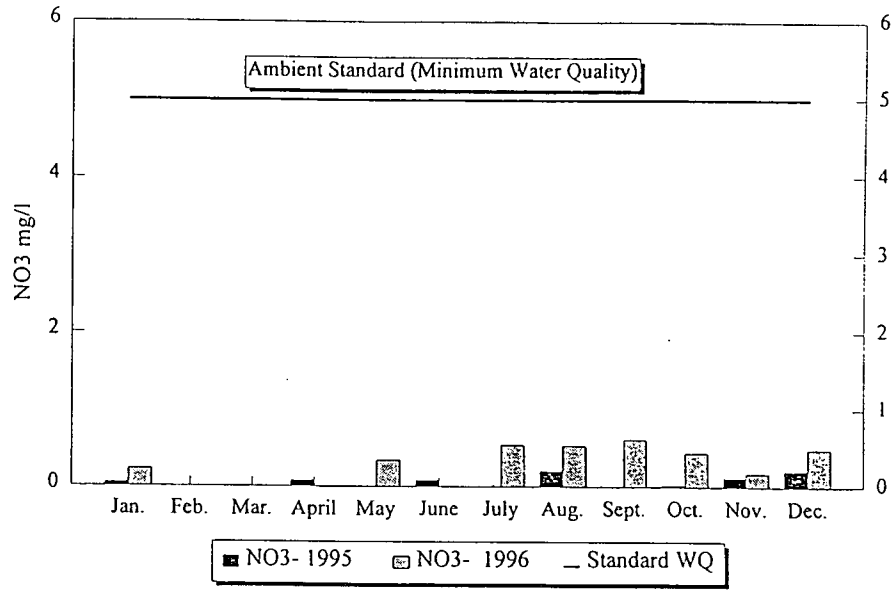
Variation of Nitrates at Kimbulwana Oya (Spill Side) 1995 - 1996



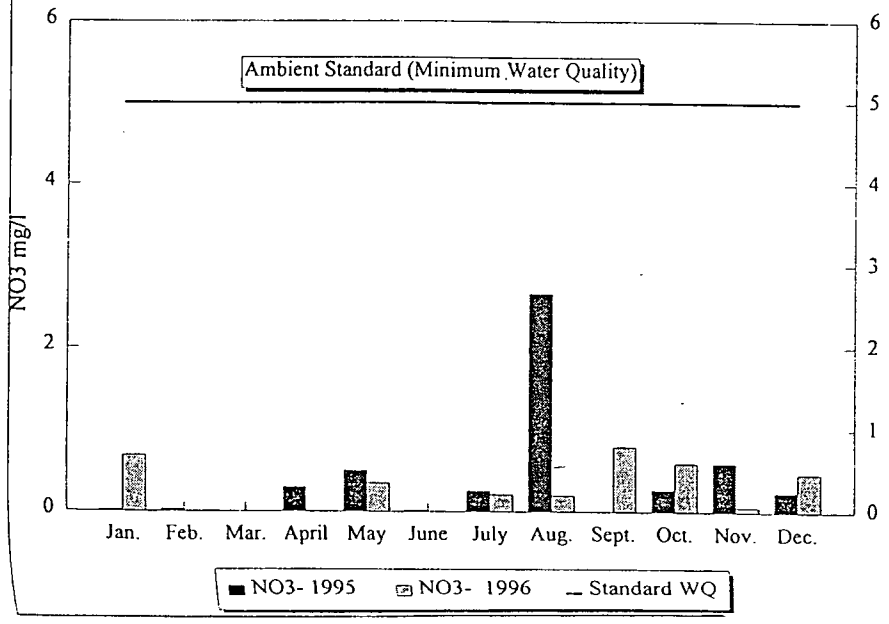
Variation of Nitrates at Galagedara Aluthwewa 1995 - 1996



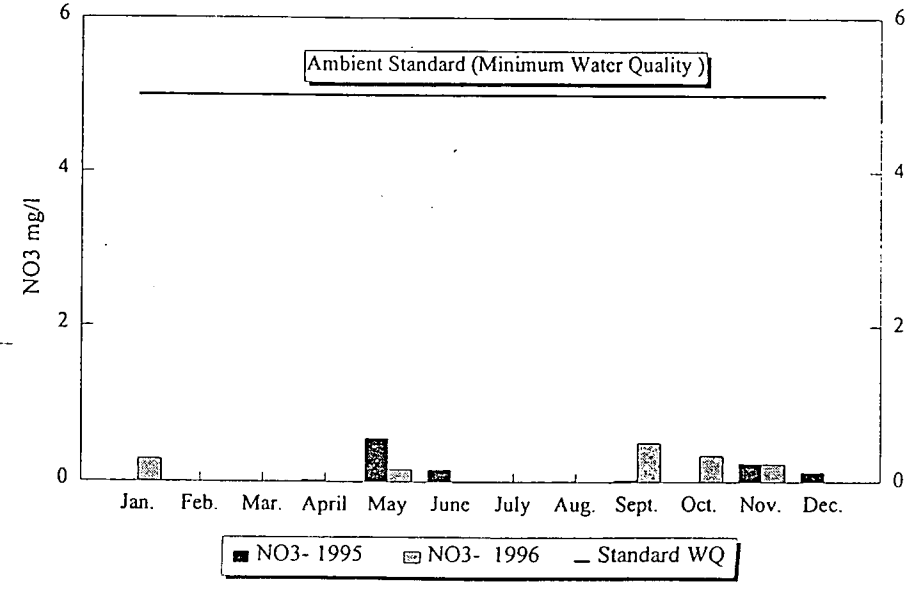
Variation of Nitrates at Kurunegala Wewa 1995 - 1996



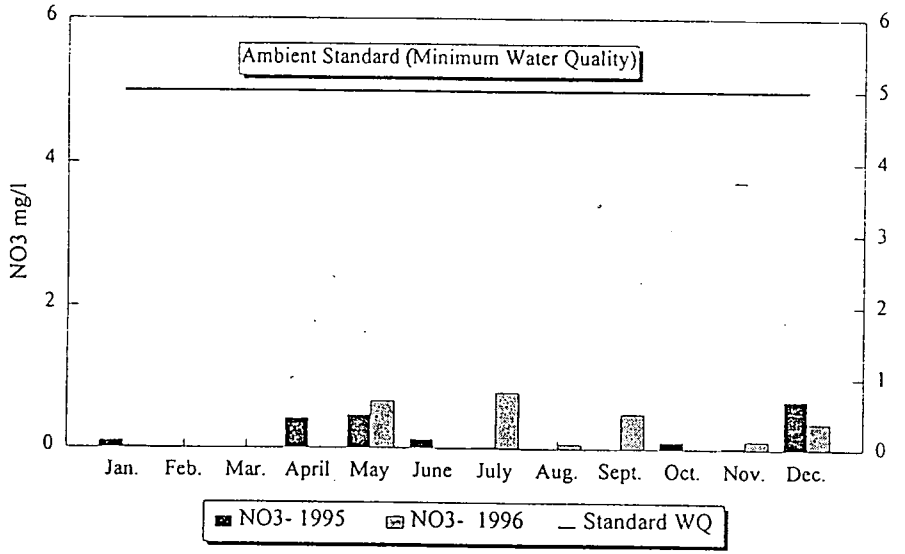
Variation of Nitrates at Panagamuwa Wewa 1995 - 1996



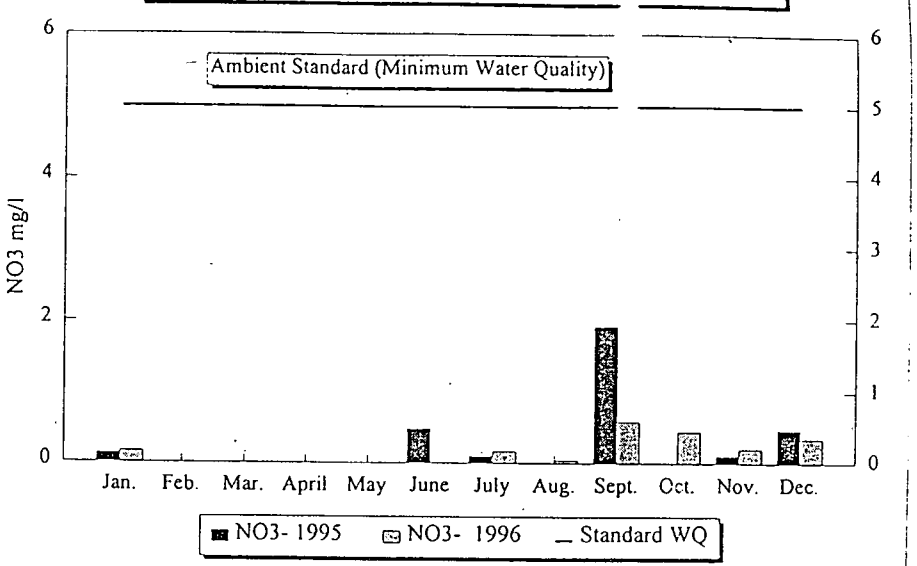
Variation of Nitrates at Bathalegoda Wewa 1995 - 1996



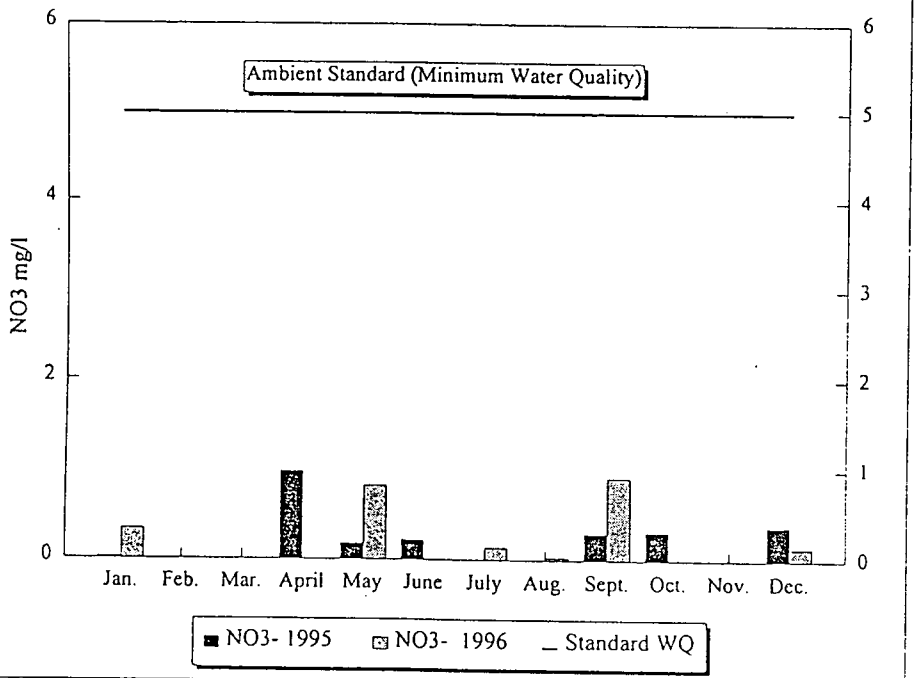
Variation of Nitrates at Attragalla Wewa 1995 - 1996



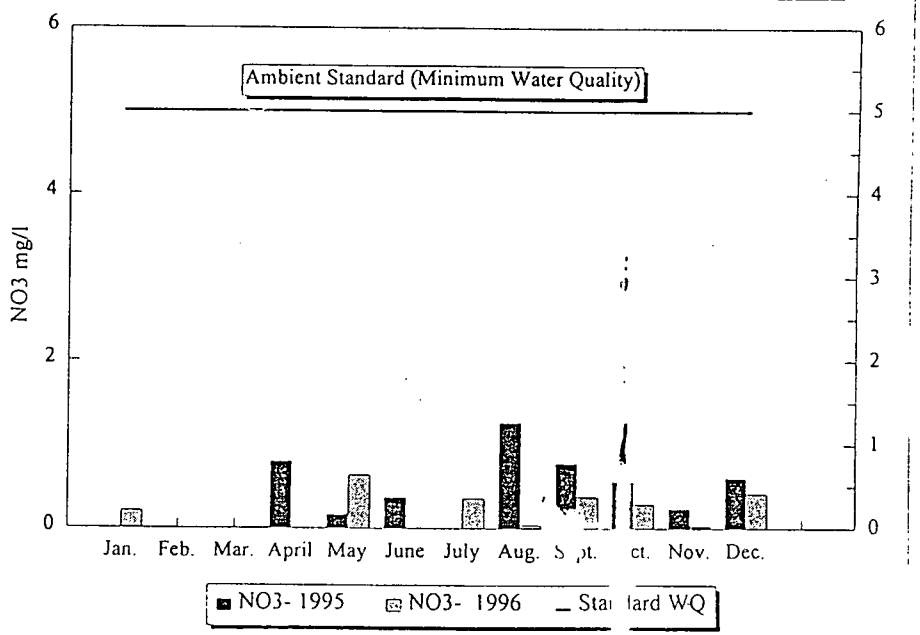
Variation of Nitrates at Hiddawa Wew 1995 - 1996

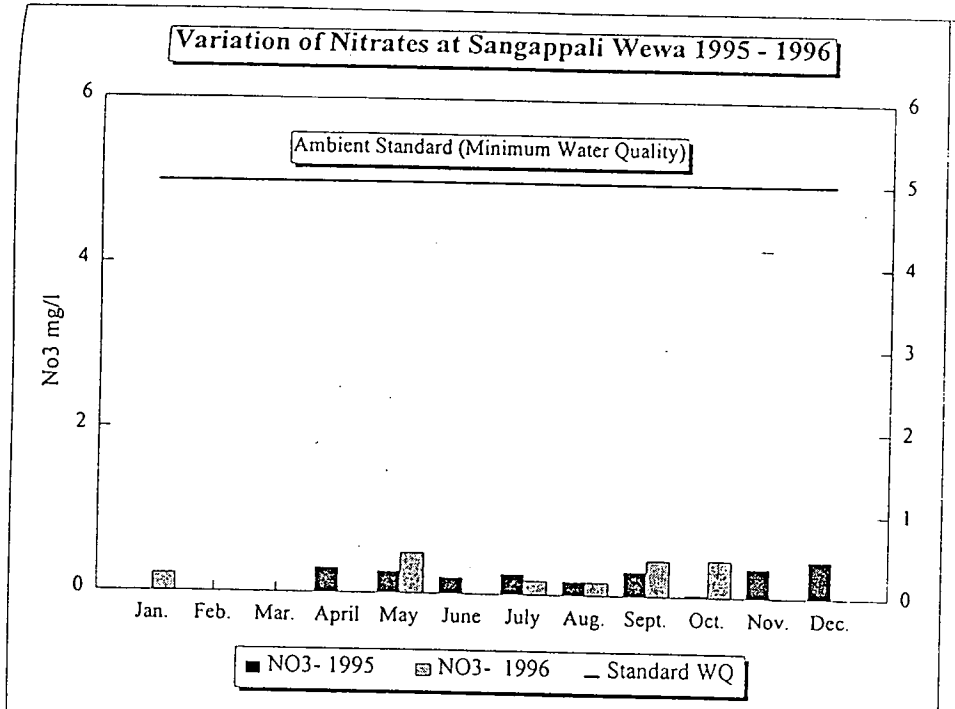


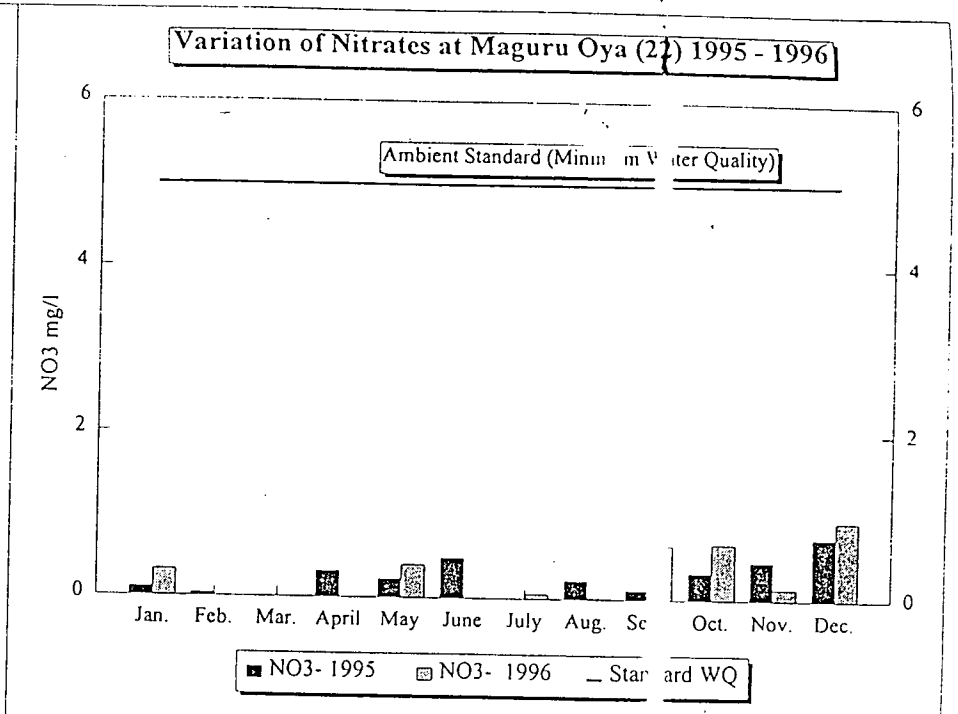
Variation of Nitrates at Ahatu Wewa 1995 - 1996

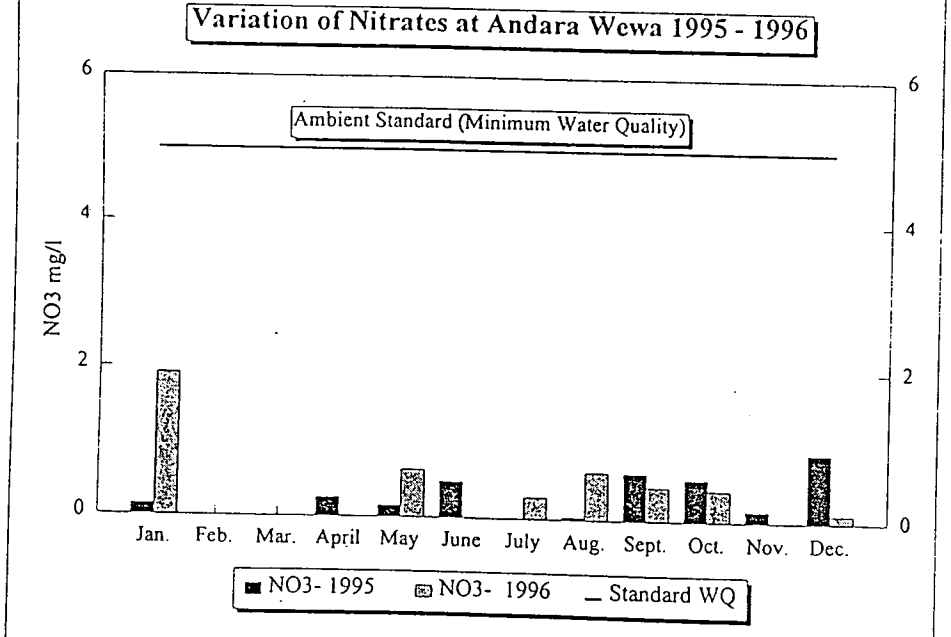


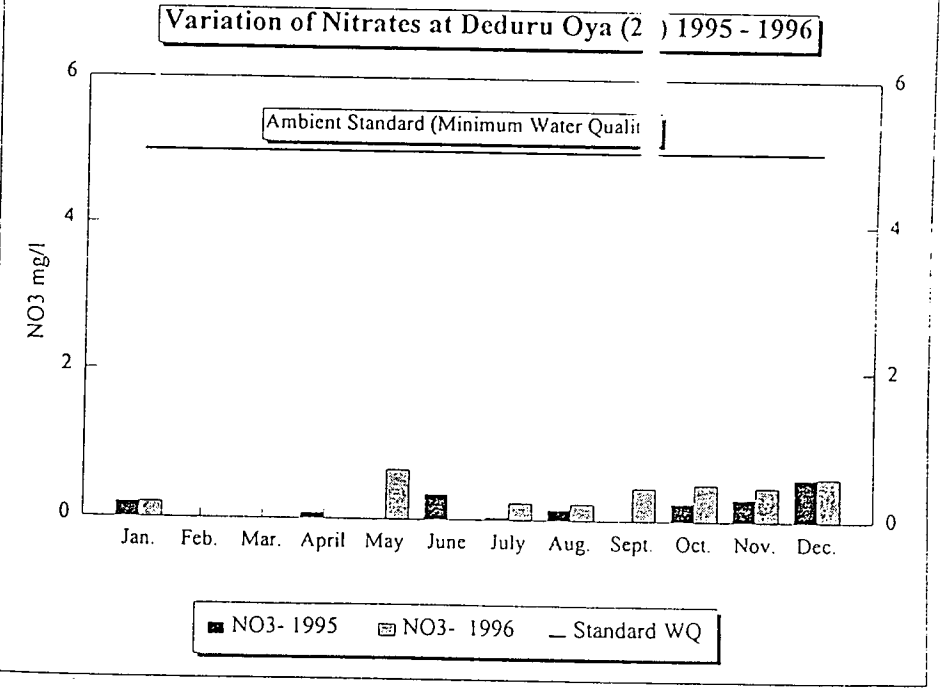
Variation of Nitrates at Berithamannawa Wewa 1995 - 1996



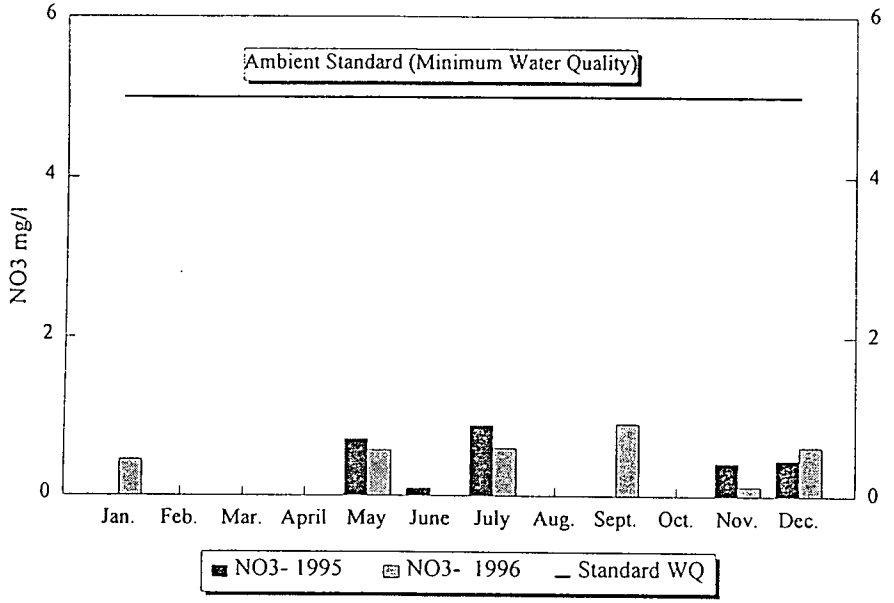

Variation of Nitrates at Sangappali Wewa 1995 - 1996
Ambient Standard (Minimum Water Quality)
No3 mg/l
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.
NO3- 1995
NO3- 1996
Standard WQ


Variation of Nitrates at Maguru Oya (2
1995 - 1996
Ambient Standard (Minimum Water Quality)
NO3 mg/l
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.
NO3- 1995
NO3- 1996
Standard WQ

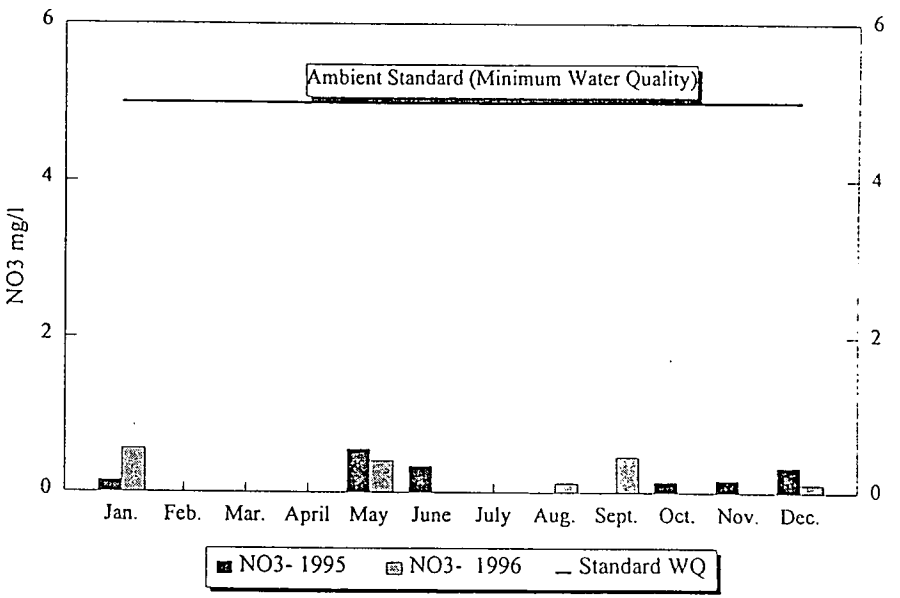

Variation of Nitrates at Andara Wewa 1995 - 1996
Ambient Standard (Minimum Water Quality)
NO3 mg/l
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.
NO3- 1995
NO3- 1996
Standard WQ


Variation of Nitrates at Deduru Oya (2
1995 - 1996
Ambient Standard (Minimum Water Quality)
NO3 mg/l
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec.
NO3- 1995
NO3- 1996
Standard WQ

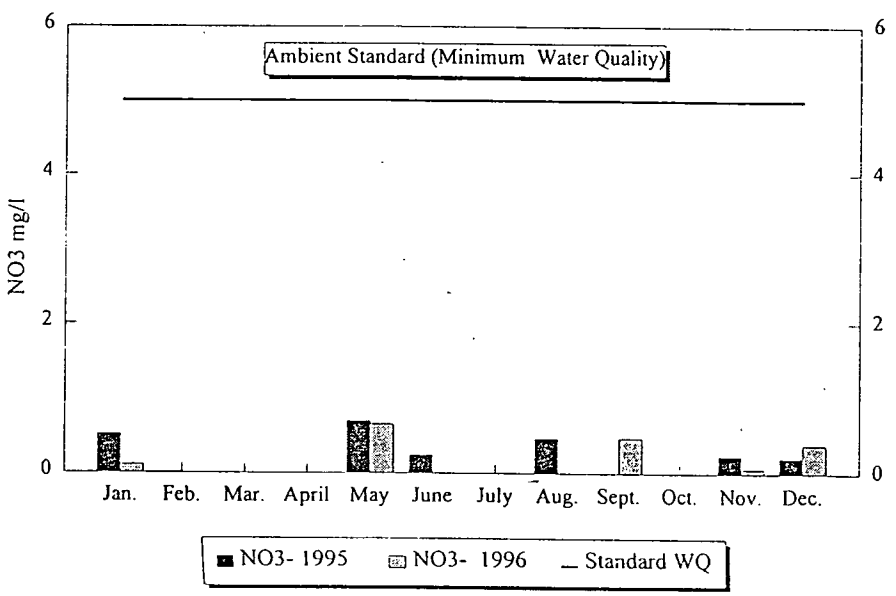
Variation of Nitrates at Kimbulwana Oya (Anicat) 1995 - 1996



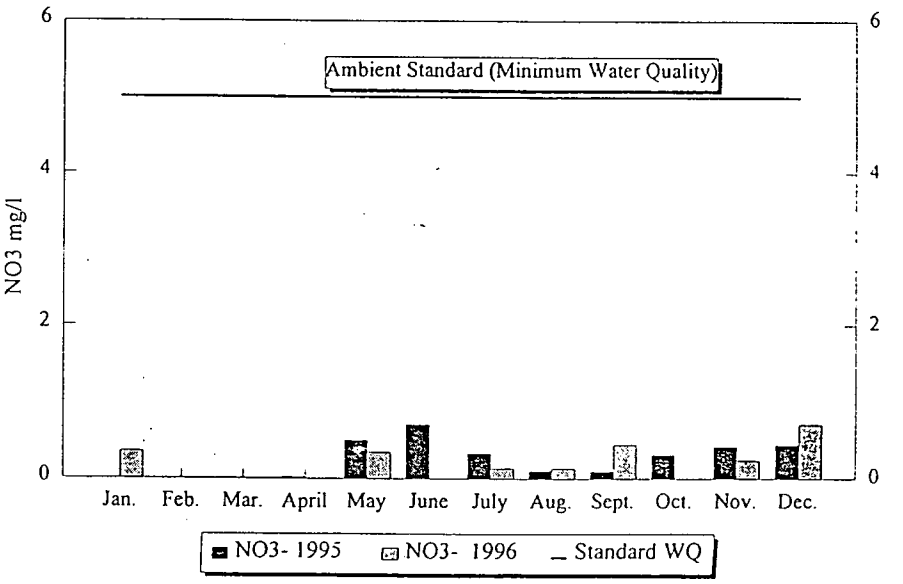
Variation of Nitrates at Hakeatuna Oya 1995 - 1996



Variation of Nitrates at Meddeketiya Wewa 1995 - 1996



Variation of Nitrates at Deduru Oya (1) 1995 - 1996



Samle Collected and analyzed by CEA Laboratory Staff
Year 1997
Parameter Nitrate

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Atthragalle Wewa	No3 97	-	-	0.009	1.371	-	0.245	0.138	0.203	0.116	0.132	0.000	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Ahatu Wewa	No3 97	-	-	0.007	2.153	-	0.014	0.197	0.425	-	-	0.601	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hiddawa Wewa	No3 97	-	-	-	-	-	-	-	-	-	-	0.856	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Berithamannawa wewa	No3 97	-	-	0.015	3.285	-	0.182	0.512	0.488	0.119	0.413	0.377	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Sangappali wewa	No3 97	-	-	0.013	0.032	-	0.691	0.212	0.242	0.884	1.167	0.452	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Andara Wewa	No3 97	-	-	0.009	3.23	-	0.226	1.239	3.212	-	-	-	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Maguru Oya (22)	No3 97	-	-	0.002	-	-	0.720	0.152	0.170	0.493	0.781	0.837	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Daduru Oya (21)	No3 97	-	-	-	-	-	0.104	0.047	0.000	0.423	0.443	0.527	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Galagedara Aluthwewa	No3 97	-	-	-	-	-	0.139	0.334	-	-	0.349	0.229	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Panagamuwa wewa	No3 97	-	-	0.003	-	-	0.224	0.062	0.000	-	0.371	0.693	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kurunegala Wewa	No3 97	-	-	0.005	0.182	-	0.269	0.170	0.095	0.696	0.994	0.122	-	
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		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Bathalagoda Wewa	No3 97	-	-	0.006	4.281	-	0.316	0.152	0.000	0.11	0.139	0.002	-	
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		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Daduru Oya (5)	No3 97	-	-	0.008	2.42	-	0.119	0.149	0.000	0.119	0.514	0.523	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kospothu Oya	No3 97	-	-	0.002	1.955	-	0.254	0.272	0.000	0.702	0.184	0.624	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kuda Oya	No3 97	-	-	0.008	-	-	0.211	0.227	0.050	0.239	0.278	0.346	-	
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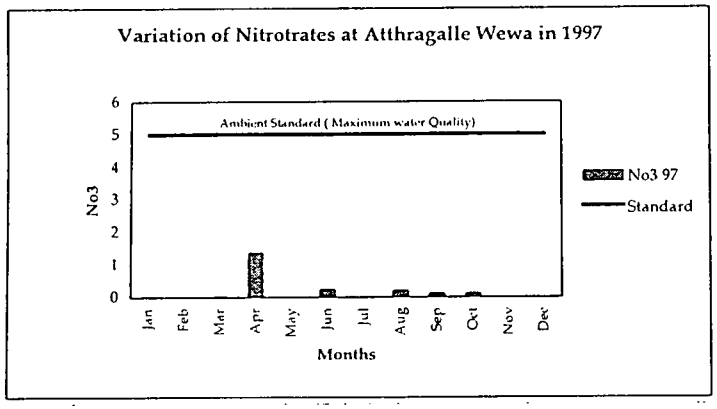
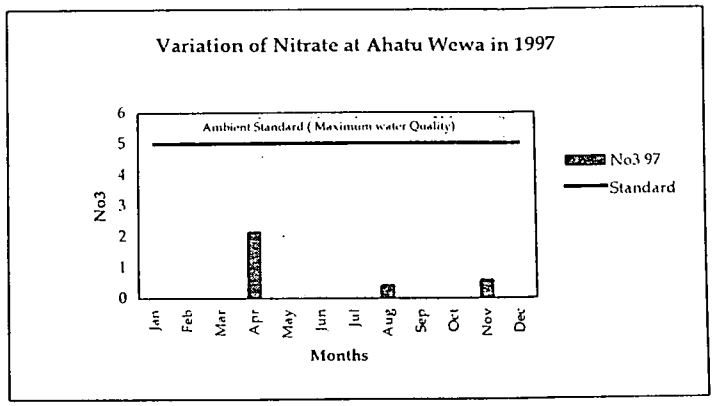
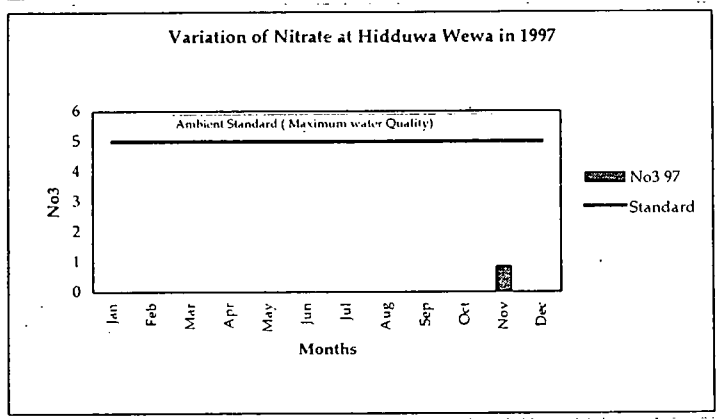
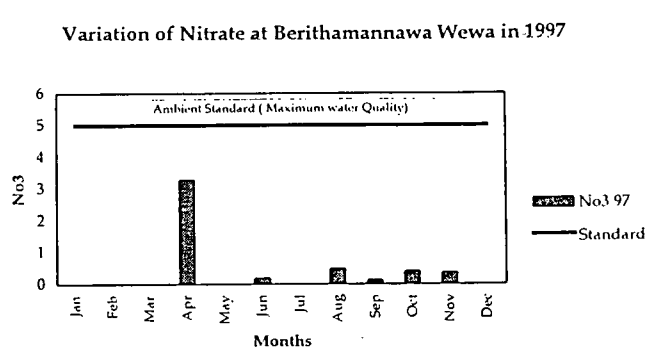
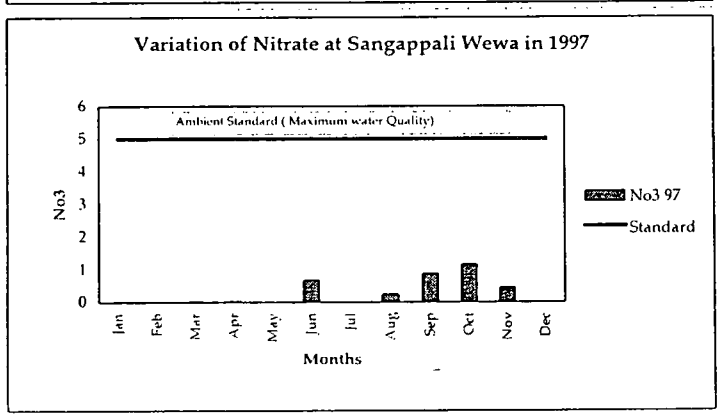
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kibulwana Oya (Spill Side)	No3 97	-	-	0.006	2.751	-	0.490	0.126	0.000	0.106	0.101	0.858	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kibulwana Oya (Anicat)	No3 97	-	-	0.011	3.155	-	0.520	0.033	0.000	0.245	0.154	0.594	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Maddeketiya wewa	No3 97	-	-	0.003	2.72	-	0.154	0.155	0.054	0.281	0.106	0.086	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hakwatuna Oya	No3 97	-	-	0.007	3.697	-	0.091	0.047	-	0.511	-	0.062	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Daduru Oya (1)	No3 97	-	-	-	-	-	0.466	0.389	1.266	0.161	0.454	0.002	-	
	Standard	5	5	5	5	5	5	5	5	5	5	5		5

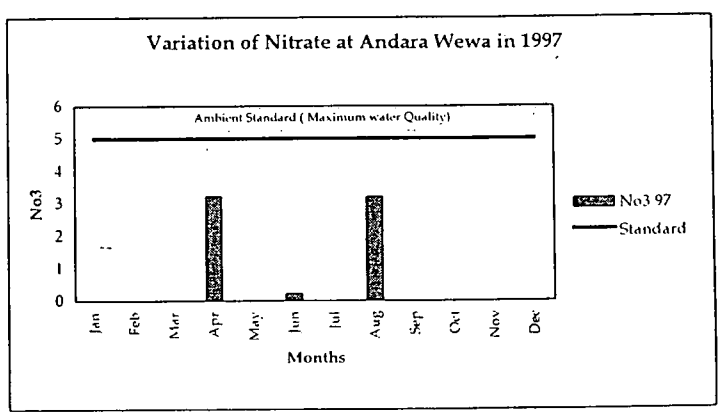

Variation of Nitrotrates at Atthragalle Wewa in 1997
Ambient Standard (Maximum water Quality)
No3
Months
No3 97
Standard
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


Variation of Nitrate at Ahatu Wewa in 1997
Ambient Standard (Maximum water Quality)
No3
Months
No3 97
Standard

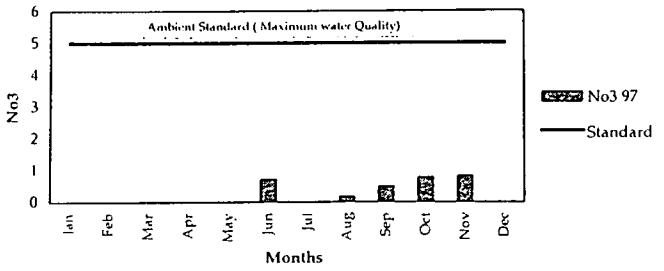

Variation of Nitrate at Hidduwa Wewa in 1997
Ambient Standard (Maximum water Quality)
No3
Months
No3 97
Standard


Variation of Nitrate at Berithamannawa Wewa in 1997
Ambient Standard (Maximum water Quality)
No3
Months
No3 97
Standard

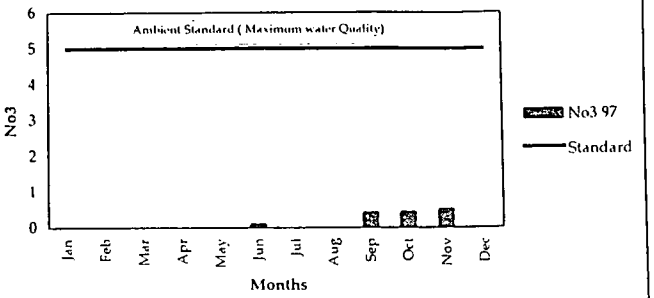

Variation of Nitrate at Sangappali Wewa in 1997
Ambient Standard (Maximum water Quality)
No3
Months
No3 97
Standard


Variation of Nitrate at Andara Wewa in 1997
Ambient Standard (Maximum water Quality)
No3
Months
No3 97
Standard

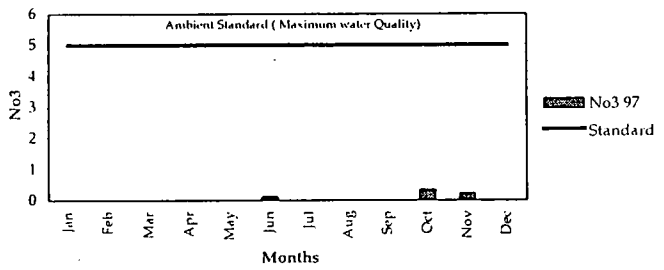
Variatiion of Nitrate at Maguru Oya (22) in 1997



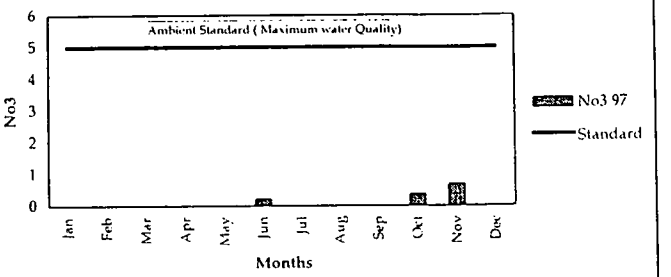
Variation of Nitrare at Deduru Oya (21) in 1997



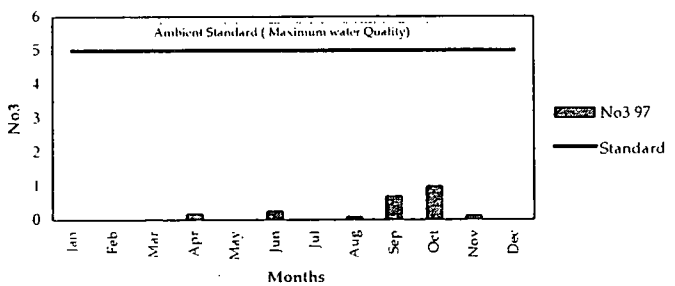
ariation of Nitrate at Galagedara Aluthwewa in 1998



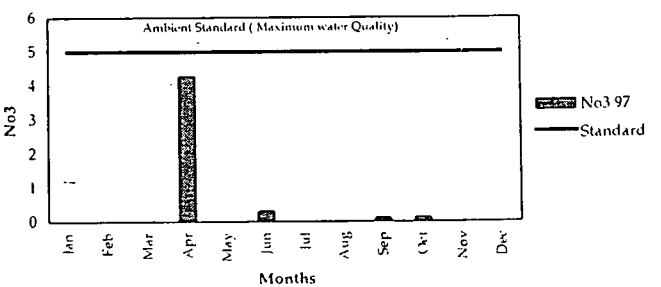
Variation of Nitrates at Panagamuwa Wewa in 1997



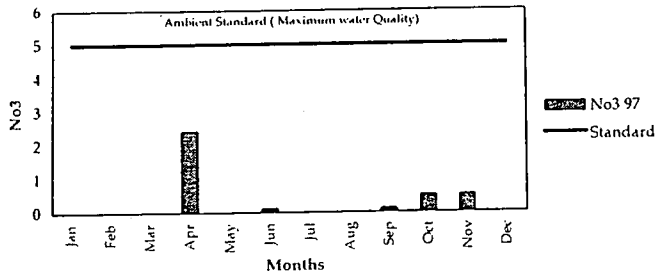
Variation of Nitrates at Kurunegala Wewa in 1997



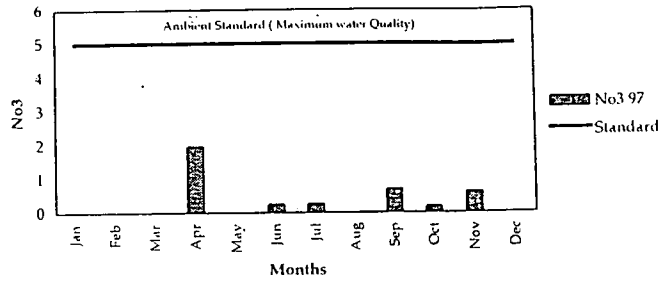
Variation of Nitrate at Bathalegoda Wewa in 1997



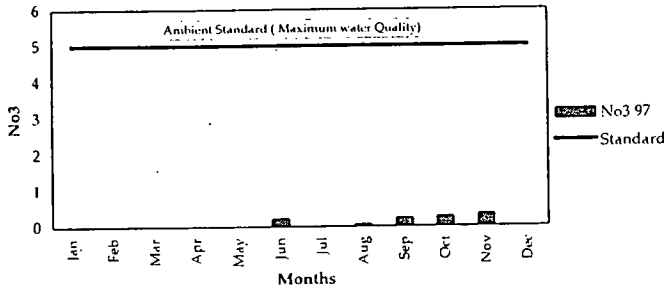
Variation of Nitrate at Deduru Oya (5) in 1997



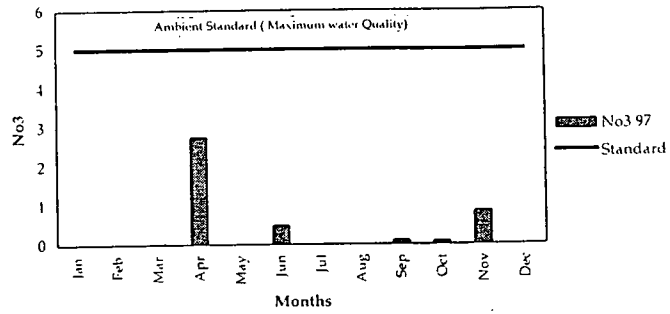
Vatiation of Nitrate at Kospotu Oya in 1997



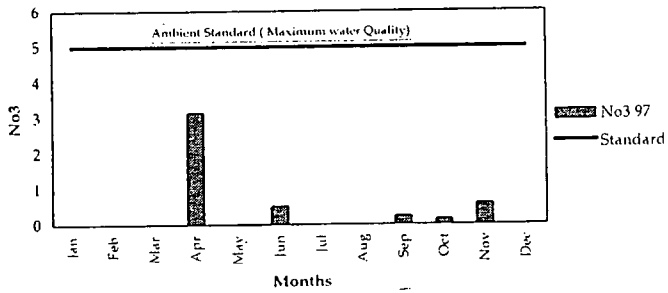
Variation of Nitrate at Kuda Oya in 1997



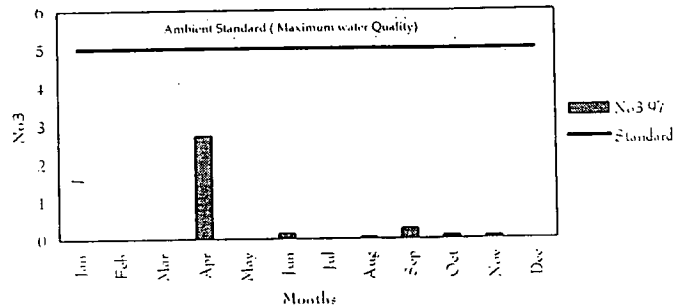
Variation of Nitrate at Kimbulwana Oya (Spill Side) in 1997



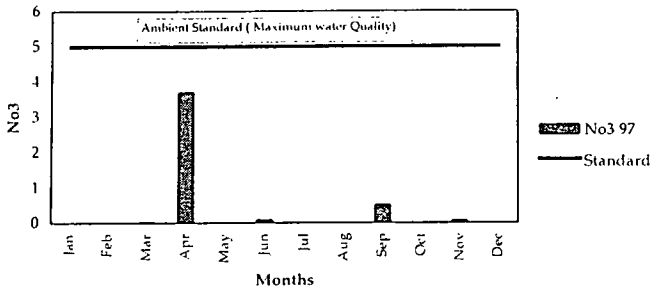
Variation of Nitrates at Kimbulwana Oya (Anicat Side) in 1997



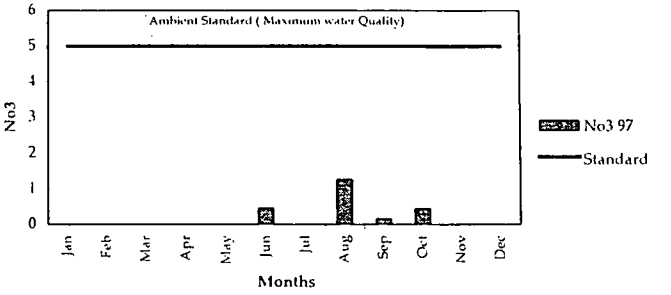
Variation of Nitrate at Meddeketiya Wewa in 1997



Variation of Nitrate at Hakwatuna Oya in 1997



Variation of Nitrate at Deduru Oya (1) in 1997



Annexure XI

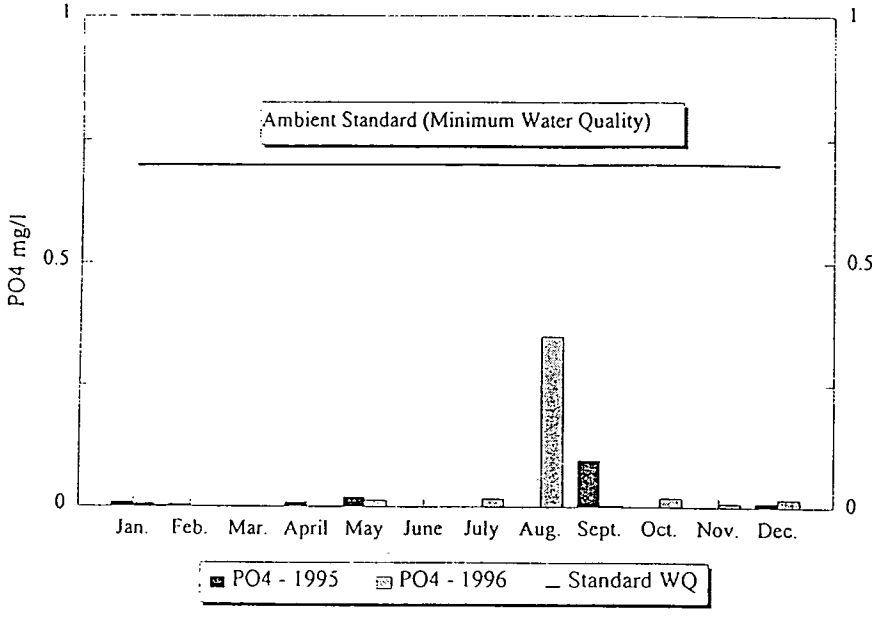
Phosphate (PO_4^{3-}) levels of Surface Water Samples in North Western Province during 1995 -1997.

Surface Water Quality of selected Tanks and Rivers in North Western Province
Samples collected and analyzed by CEA Laboratory
Year : 1995 & 1996
Parameter Phosphates (PO4)

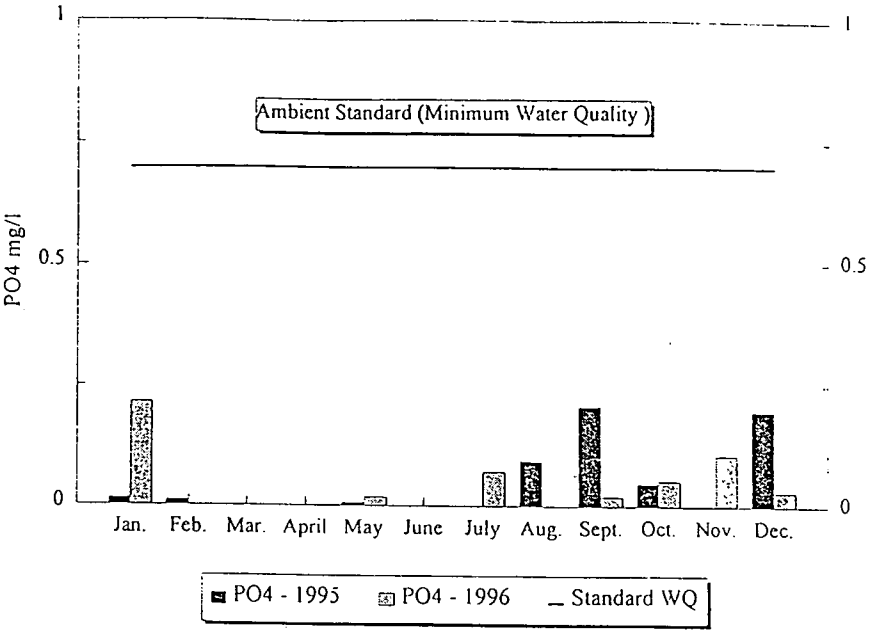
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Aththagalle Wewa	PO4 - 1995	0.029	0.00		0.015	0.017	0.00	0.00	0.00	0.00	0.00	0.00	0.008
	PO4 - 1996	0.159				0.00		0.013	0.00	0.006	0.019	0.00	0.00
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Ahatu Wewa	PO4 - 1995	0.007	0.00		0.014	0.006	0.00	0.00	0.00	0.005	0.015	0.00	0.006
	PO4 - 1996	0.014				0.00		0.00	0.26	0.00	0.023	0.00	0.00
	Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Hiddawa Wewa	PO4 - 1995	0.018	0.008		0.058	0.011	0.00	0.010	0.970	1.016		0.015	0.039
	PO4 - 1996	0.024				0.062		0.015	0.00	0.06	0.292	0.019	0.061
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Berithamannawa wewa	PO4 - 1995	0.140	0.004		0.068	0.018	0.00	0.003	0.065	0.285	0.065	0.001	0.004
	PO4 - 1996	0.003				0.053		0.008	0.00	0.01	0.044	0.012	0.008
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Sangappali wewa	PO4 - 1995	0.010	0.005		0.010	0.022	0.00	0.00	0.00	0.098	0.00	0.00	0.010
	PO4 - 1996	0.005				0.013		0.017	0.35	0.004	0.019	0.008	0.017
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Andara Wewa	PO4 - 1995	0.015	0.011		0.00	0.006	0.00	0.00	0.095	0.209	0.048		0.198
	PO4 - 1996	0.215				0.018		0.072	0.00	0.02	0.053	0.106	0.030
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Maguru Oya (22)	PO4 - 1995	0.014	0.024		0.072	0.017	0.00	0.00	0.00	0.00	0.039	0.008	0.060
	PO4 - 1996	0.00				0.00		0.006	0.00	0.01	0.145	0.026	0.061
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Daduru Oya (21)	PO4 - 1995	0.011	0.056		0.122	0.023	0.00	0.00	0.00	0.003	0.047	0.003	0.005
	PO4 - 1996	0.00				0.00		0.00	0.4	0.006	0.325	0.263	0.068
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Galagedara Aluthwewa	PO4 - 1995	0.075	0.085		0.132	0.020	0.00	0.341	0.107	0.378	0.094	0.00	0.00
	PO4 - 1996					0.00					0.067	0.082	0.067
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Panagamuwa wewa	PO4 - 1995	0.044	0.005		0.003	0.00	0.028	0.102	0.052	0.023	0.010	0.00	0.010
	PO4 - 1996	0.079				0.00		0.00	0.00	0.05	0.039	0.00	0.00
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Kurunegala Wewa	PO4 - 1995	0.011	0.017		0.045	0.004	0.00	0.016	0.003	0.006	0.015	0.00	0.051
	PO4 - 1996	0.024				0.022		0.065		0.025	0.050	0.013	0.005
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Bathalagoda Wewa	PO4 - 1995	0.00	0.009		0.010	0.020	0.00	0.008	0.005	0.021	0.006	0.00	0.014
	PO4 - 1996	0.065				0.00				0.006	0.005	0.031	0.026
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Daduru Oya (5)	PO4 - 1995	0.159	0.00		0.009	0.017	0.022	0.00	0.033	0.00	0.033	0.035	0.014
	PO4 - 1996	0.033				0.00		0.00		0.006		0.00	0 063
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0 7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Kospothu Oya	PO4 - 1995	0.013	0.00		0.045	0.00	0.00	0.003	0.049	1.209	0.046	0.008	0.006
	PO4 - 1996	0.00				0.00		0.00		0.02		0.006	0.042
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Kuda Oya	PO4 - 1995	0.111	0.001		0.009	0.015	0.00	0.00	0.00	0.00	0.015	0.019	0.033
	PO4 - 1996	0.00				0.00		0.00	0.22	0.004		0.006	0.082
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Kibulwana Oya (Spill Sid	PO4 - 1995	0.003	0.028		0.018	0.072	0.00	0.00	0.024	0.010	0.010	0.00	0.030
	PO4 - 1996	0.042				0.00		0.00		0.03		0.008	0.007
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Kibulwana Oya (Anicat)	PO4 - 1995	0.020	0.007		0.001	0.00	0.00	0.00	0.00	0.003	0.024	0.047	0.042
	PO4 - 1996	0.04				0.00		0.00		0.015		0.006	0.044
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Maddeketiya wewa	PO4 - 1995	0.006	0.00				0.00	0.00	0.010	0 102		0.005	0.00	0.00
	PO4 - 1996	0.003					0.00		0.005		0.00		0.00	0.218
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Hakwatuna Oya	PO4 - 1995	0.011	0.00			0.00	0.00	0.00	0.005	0.003	0.00	0.003	0.00	0.035
	PO4 - 1996	0.088					0.00			0.00	0.015			0.00
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7
		Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Daduru Oya (1)	PO4 - 1995	0.015	0.003			0.005	0.00	0.00	0.003	0.014	0.006	0.043	0.005	0.010
	PO4 - 1996	0.003					0.303		0.00	0.00	0.01		0 107	0.069
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0 7	0.7	0 7

0 = Phosphates levels are Bellow Detectable Level (BDL) and Blank = No water

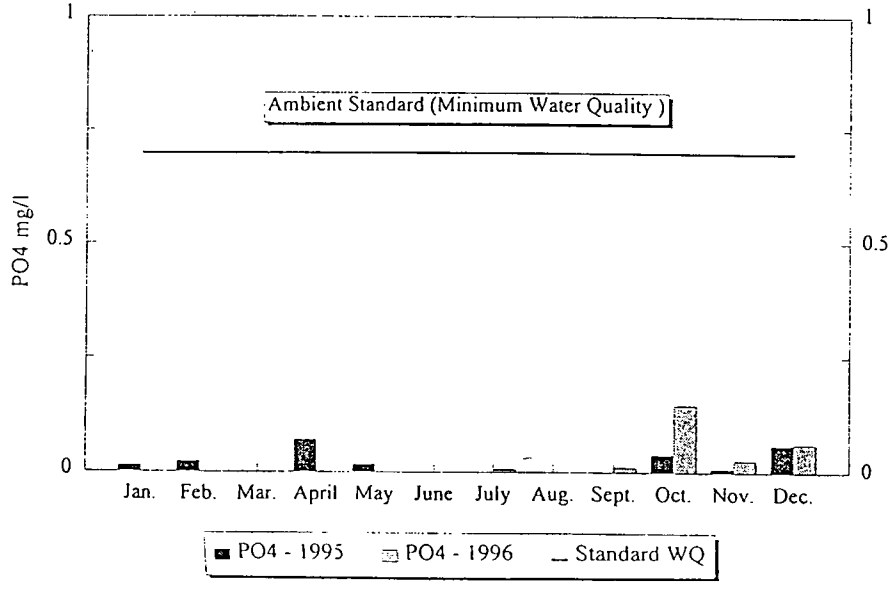
Variation of Phosphate at Sangappali Wewa 1995-96



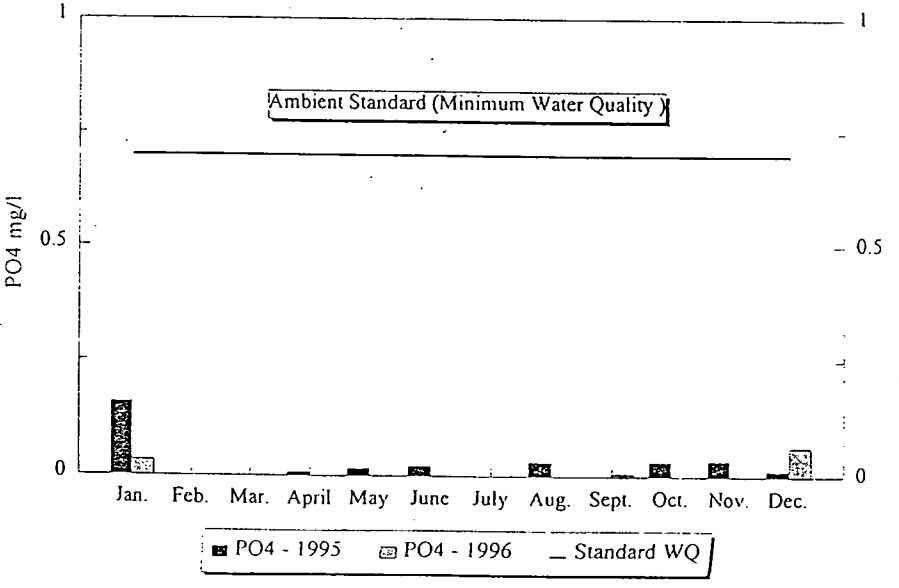
Variation of Phosphates at Andara Wewa 1995-96



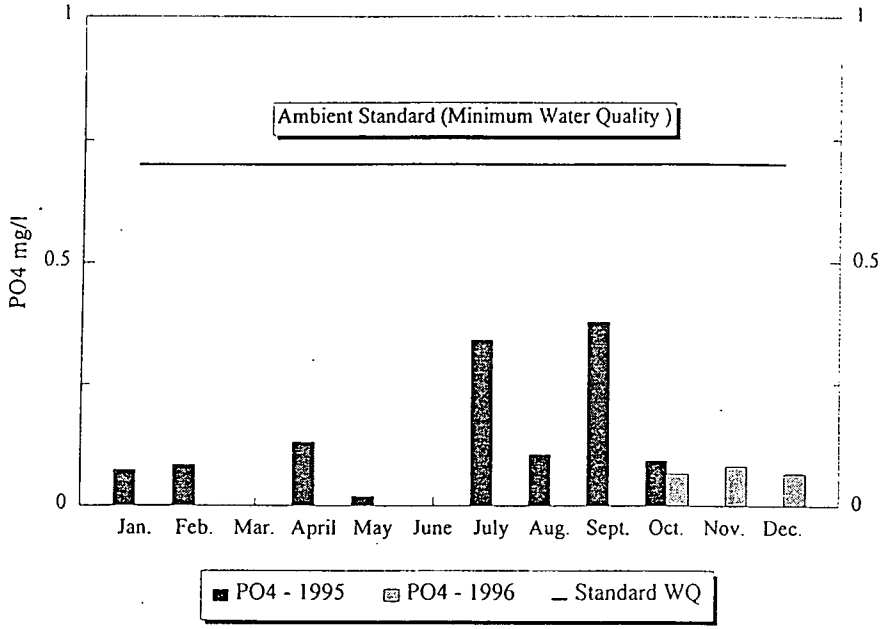
Variation of Phosphate at Mguru Oya (22) 1995 -1996



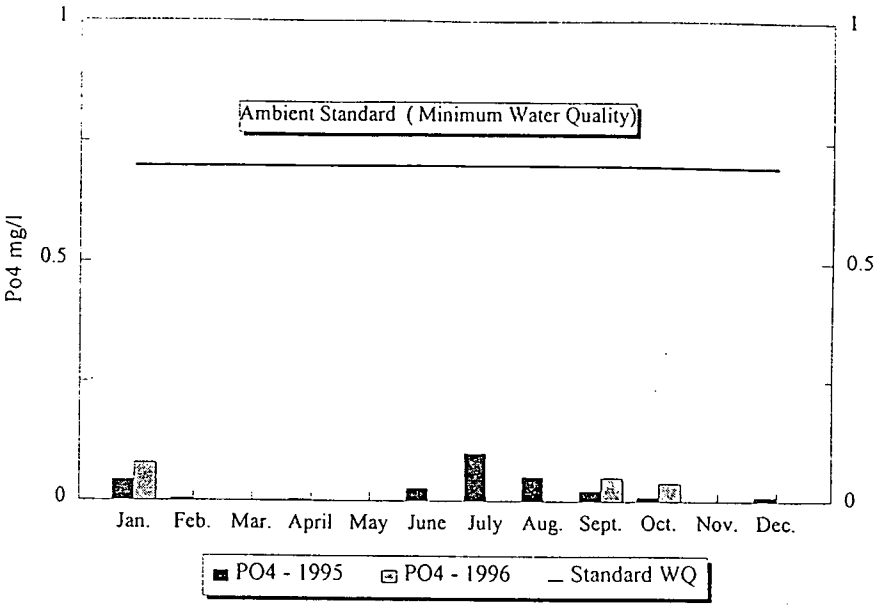
Variation of Phosphates at Daduru Oya (21) 1995-96



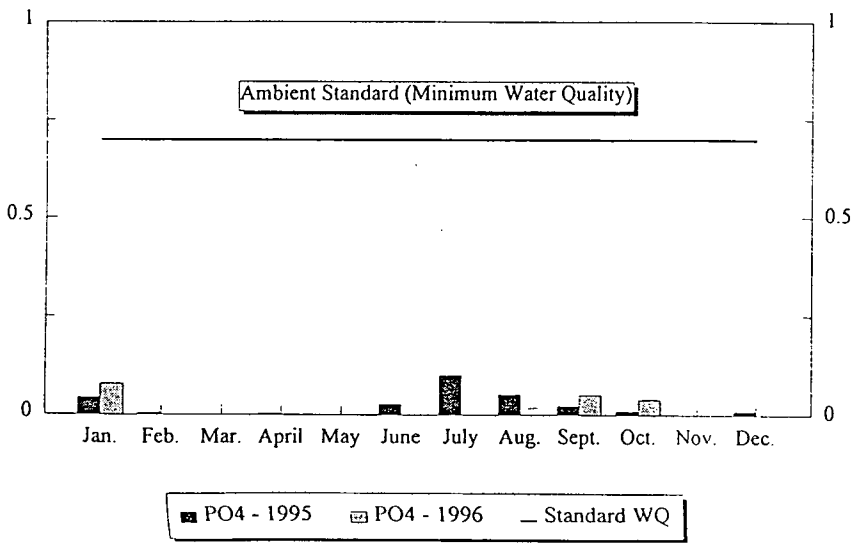
Variation of Phosphate at Galagedara Aluthwewa 1995-96



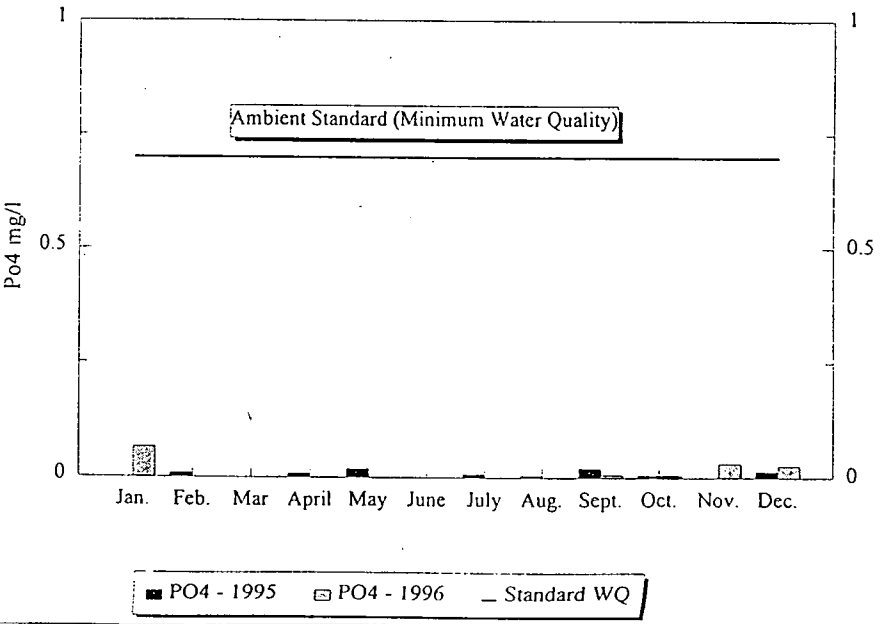
Variation of Phosphate at Panagamuwa Wewa 1995-96



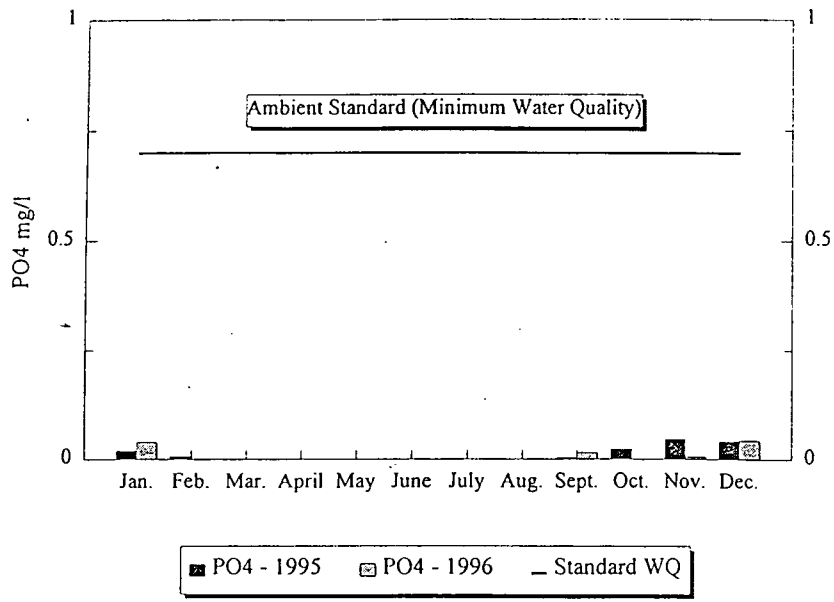
Variation of Phosphate at Kurunegala Wewa 1995-96



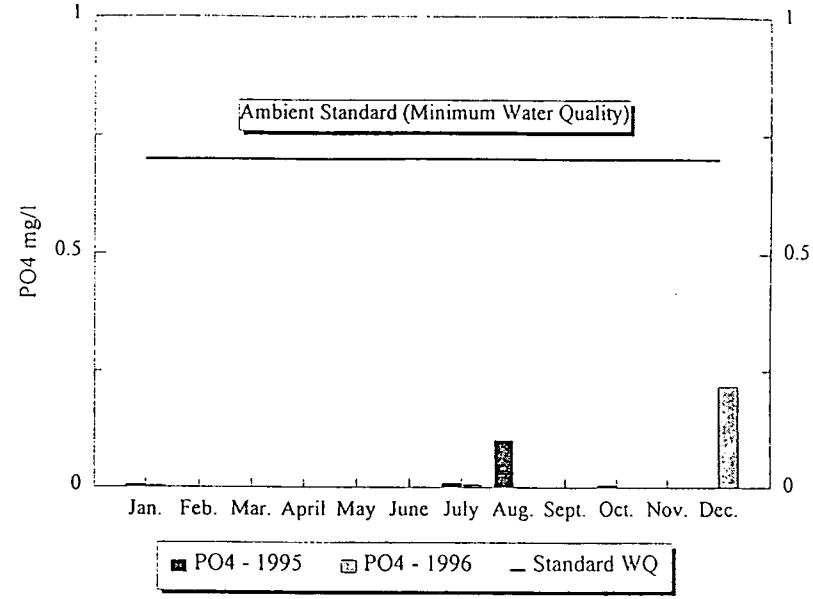
Variation of Phosphate at Bathalegoda Wewa (1995-96)



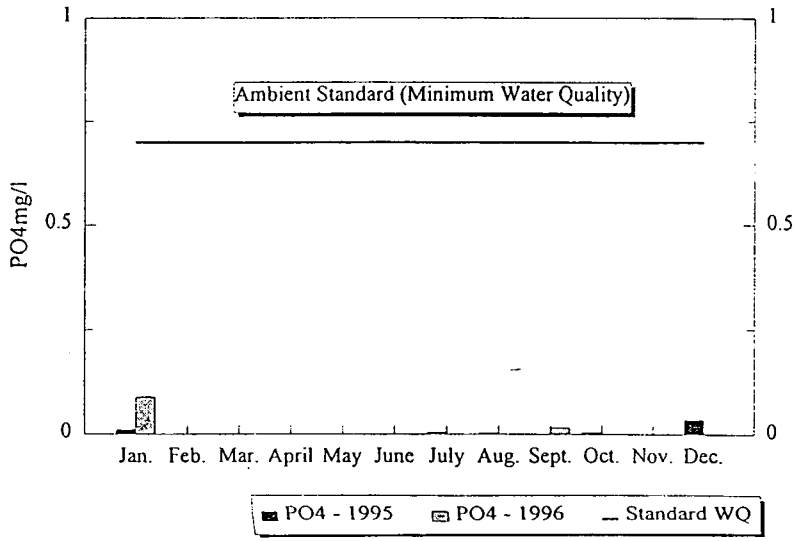
Variation of Phosphate at Kimbulwana Oya (Anicut)



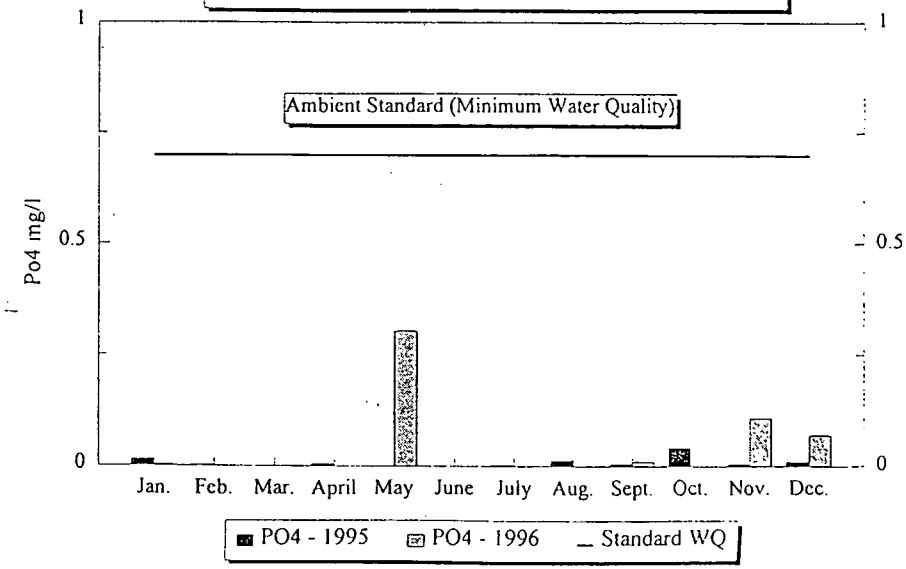
Variation of Phosphate at Maddeketiya Wewa (1995-96)



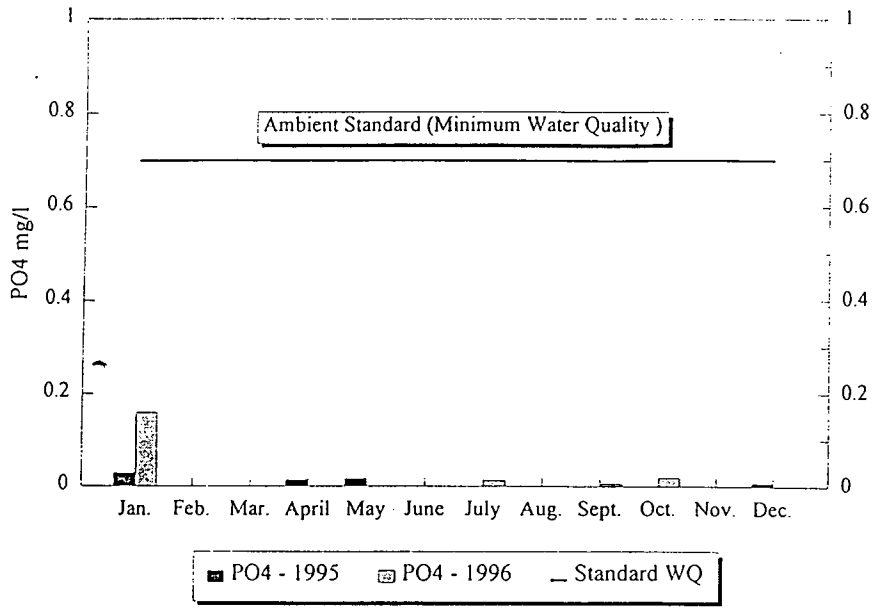
Variation of Phosphate at Hakwatuna Oya (1995-96)



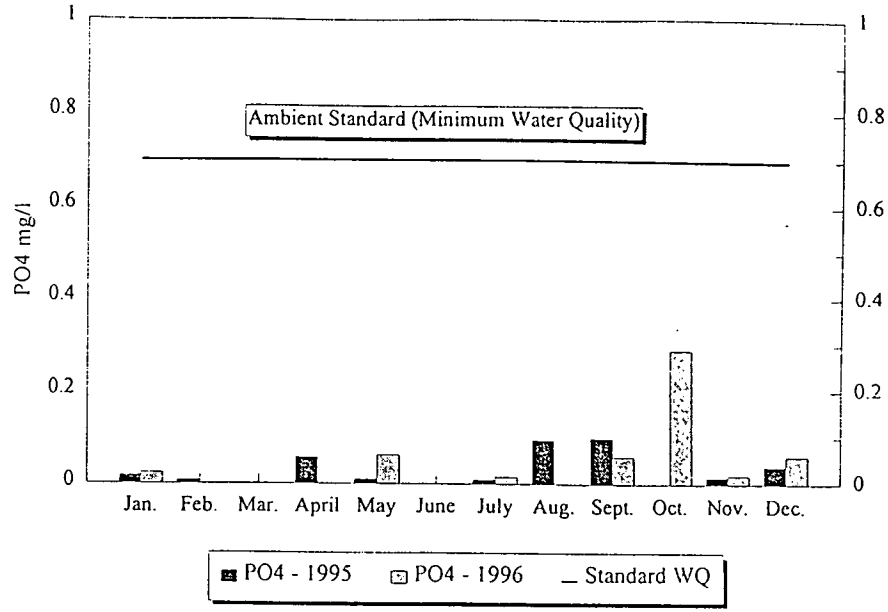
Variation of Phosphate at Daduru Oya (1)



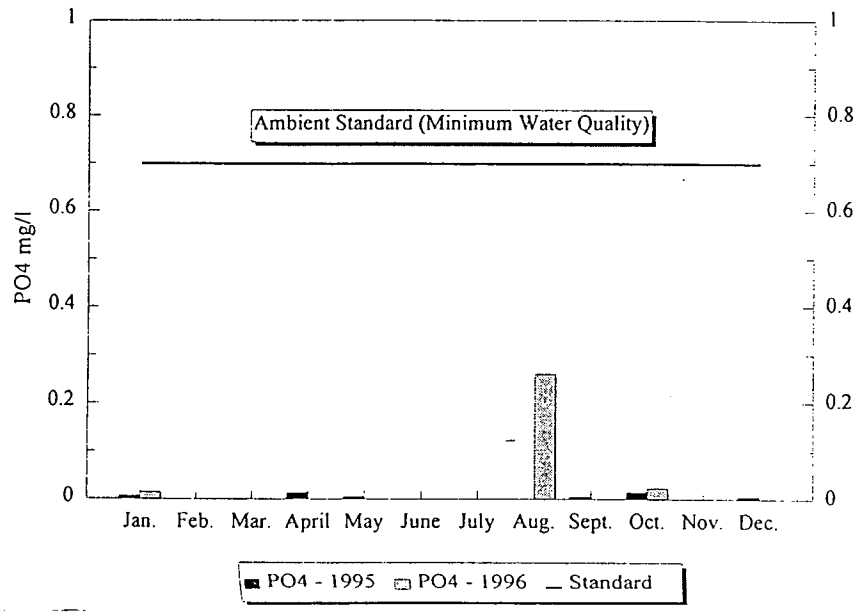
Variation of Phosphate At Attharagalle Wewa 1995- 96



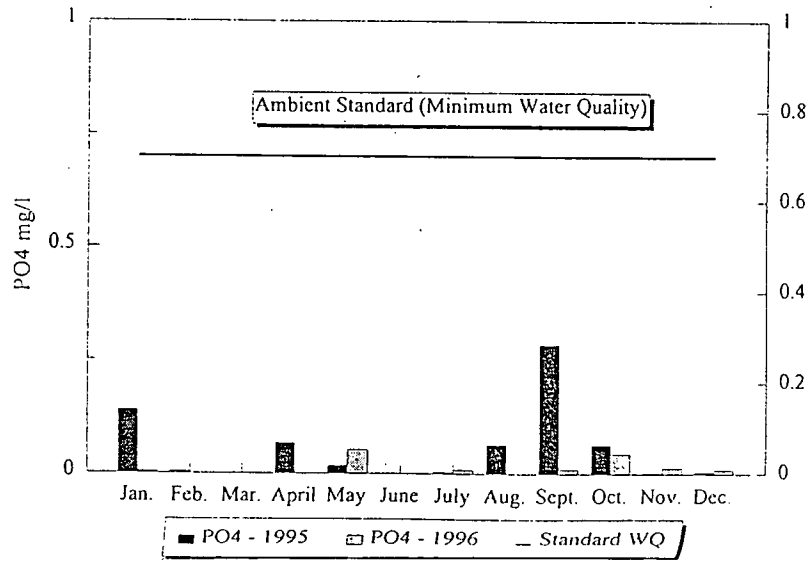
Variation of Phosphate at Hiddawa Wewa 1995-96



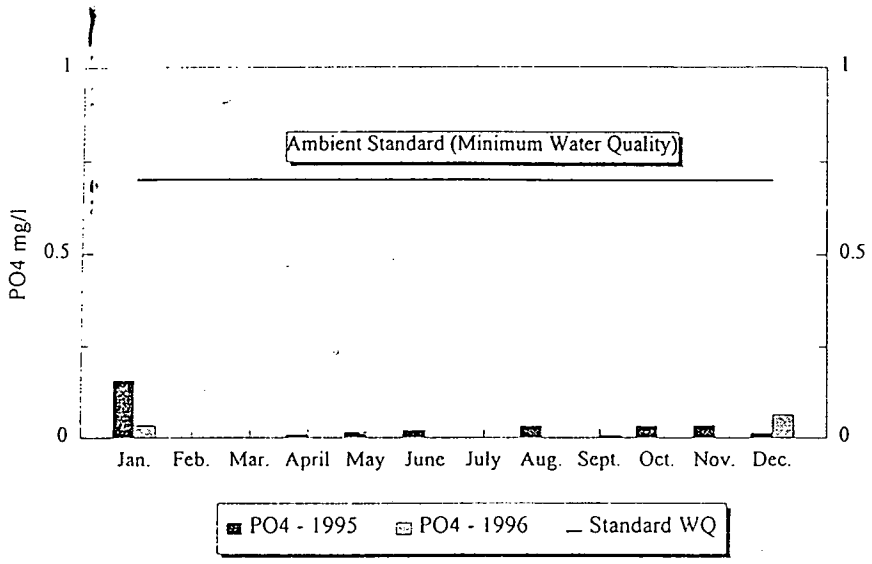
Variation of Phosphate at Ahatu Wewa 1995 - 1996



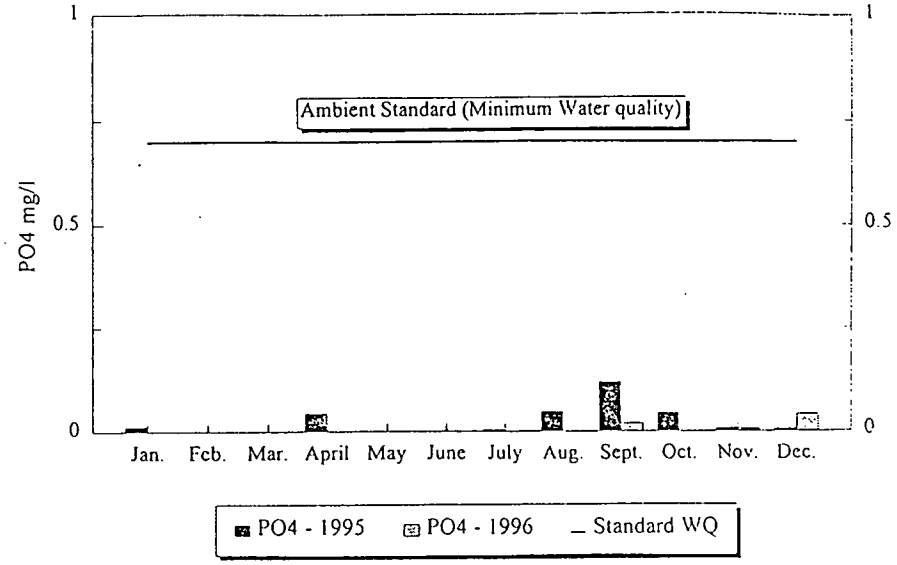
Variation of Phosphate at Berithamanawa Wewa



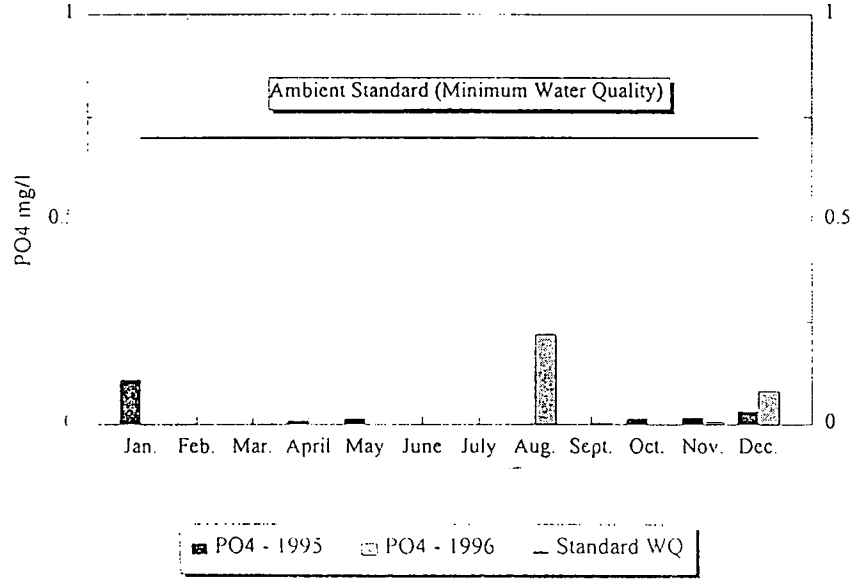
Variation of Phosphate at Daduru Oya (5) 1995-96



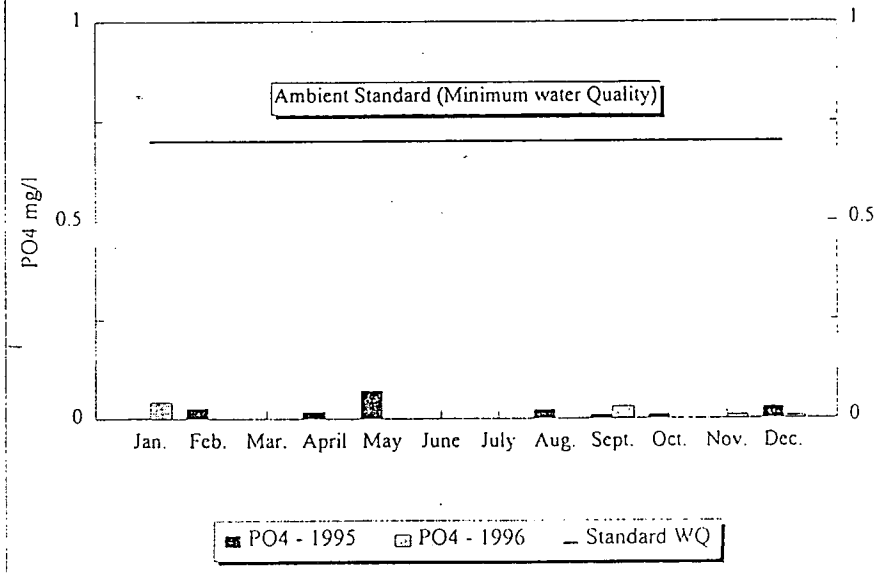
Variation of Phosphate at Kospothu Oya 1995-96



Variation of Phsphate at Kuda Oya(1995-96)



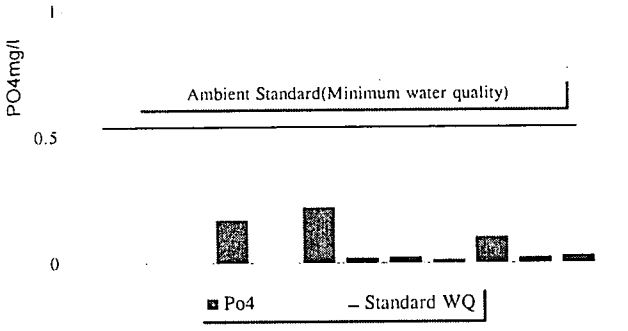
Variation of Phosphate at Kimbulwana Oya (1995-96)



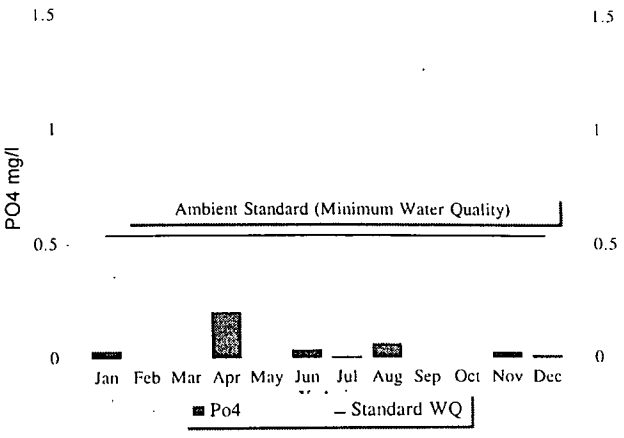
Samle Collected and analyzed by CEA Alboratory Staff
Year 1997
Parameter Phosphate mg/l

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Atthragalle Wewa	Po4	0	-		0	0.171	-	0.22	0.021	0.025	0.013	0.104	0.024	0.03
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Ahatu Wewa	Po4	0.035	_		0	0.203	_	0.038	0.006	0.064	-	-	0.026	0.012
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hiddawa Wewa	Po4	0.008	-	-	-	-	-	-	-	-	-	-	0.55	0.021
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Berithamannawa w	Po4	0.008	-		0	0.237	-	0.033	0.106	0.154	0.015	0.16	0.337	0.002
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Sangappali wewa	Po4	0	_		0	0.18	_	0.137	0.013	0.104	0.134	0.601	0.073	0
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Andara Wewa	Po4	0.008	-		0	0.364	-	0.033	0.346	1.226	-	-	-	0
		0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Maguru Oya (22)	Po4	0.007	-		0	-	-	0.013	0.003	0	0.149	0.085	0.039	0
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Daduru Oya (21)	Po4	0	_		-	-	_	0.001	0	0	0.003	0.084	0	0.005
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Galagedara Aluthw	Po4	0	0	0	0	0	0.004	0.132	-	-		0.041	0.11	0
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Panagamuwa wewa	Po4	0.012	-		0	-		0	0.003	0.011	-	0.004	0.151	0.104
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kurunegala Wewa	Po4	0	_		0	0.209	_	0.047	0.022	0.064	0.047	0.061	0.06	0.053
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Bathalagoda Wewa		0	0	0	0.237	-		0.006	0.026	0	0.047	0.009	0	0
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Daduru Oya (5)	Po4	0	0	0	0.15	-		0.006	0	0	0.005	0.004	0.215	0.014
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kospothu Oya	Po4	-	_		0.005	0.15	_	0.042	0	0	0.007	0.01	0.031	0.001
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
kuda Oya	Po4	-	-		0	-	-	0.008	0.003	0.004	0.015	0.031	0.141	0.014
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kimbulwana Oya (	Po4	-	-		0.026	0.164	-	0.004	0.003	0.03	0.079	0.012	0	0.037
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
kibulwana Oya (An	Po4	-	_		0.001	0.161	_	0.008	0	0.006	0.045	0.026	0.189	0.024
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Maddeketiya wewa	Po4	-	-		0.004	0.161	-	0.006	0	0	0.009	0.015	0.086	0
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hakwatuna Oya	Po4	-	_		0.01	0.146	_	0.001	0	-	0.004	-	0.056	-
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Daduru Oya (1)	Po4	-	-	-		-		0.004	0.003	0.022	0.068	0.027	0	0.015
	Standard WQ	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54

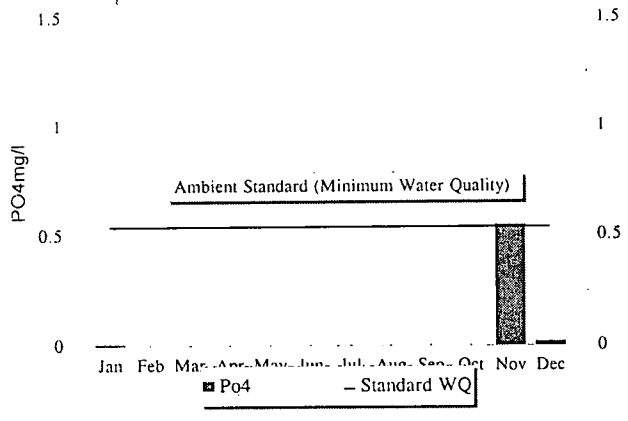
Variation of Phosphate at Attharagalle Wewa 1997



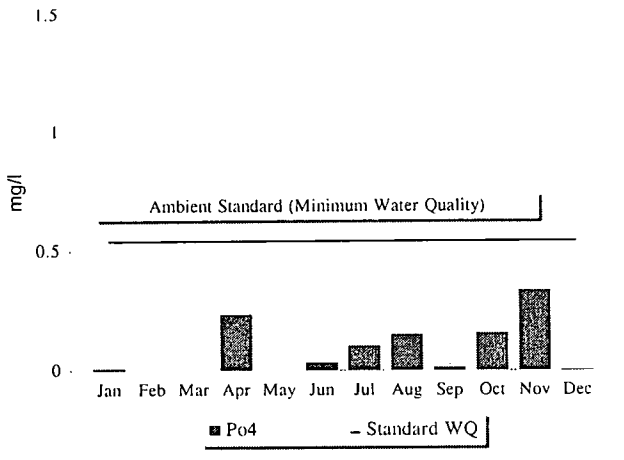
Variation of Phosphate at Ahatu wewa 1997



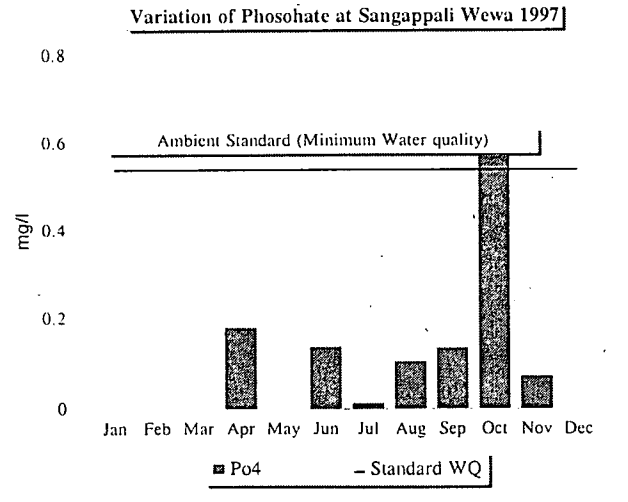
Variation of Phosphate at Hiddawa Wewa 1997



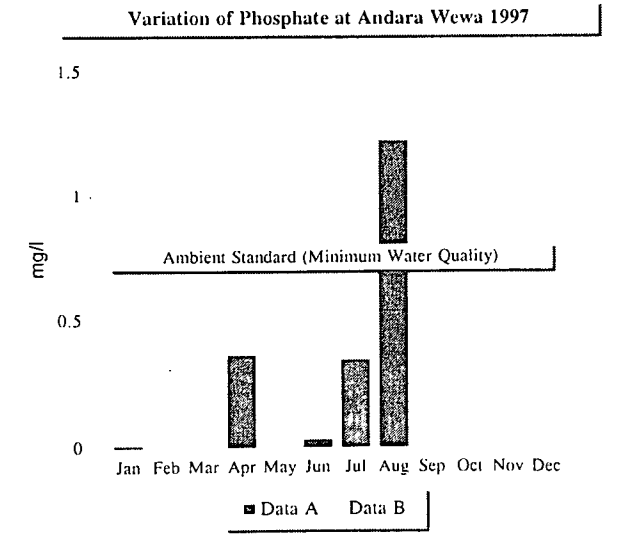
Variation of Phosphate at Berithamnnawa Wewa 1997

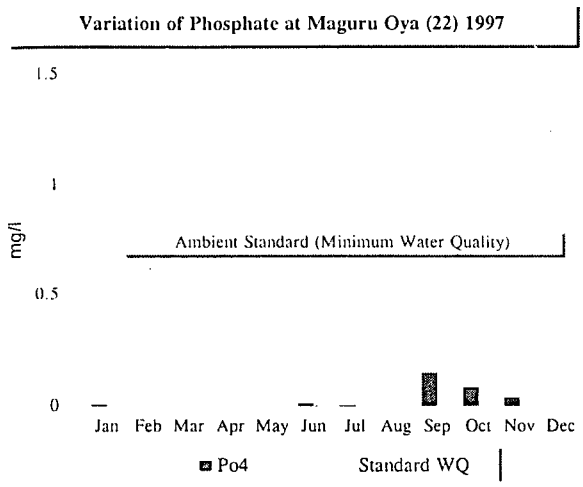


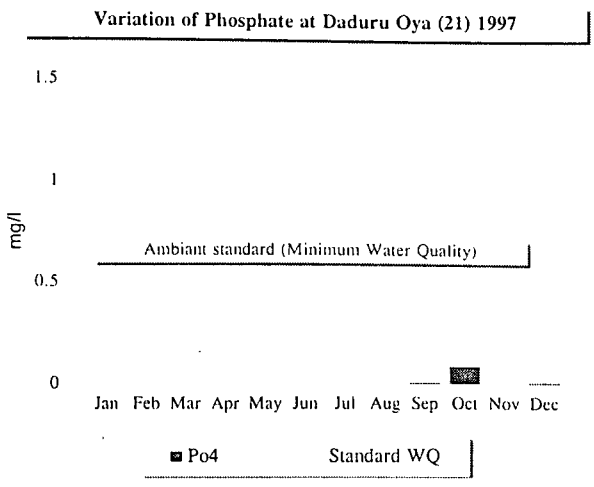
Variation of Phosohate at Sangappali Wewa 1997

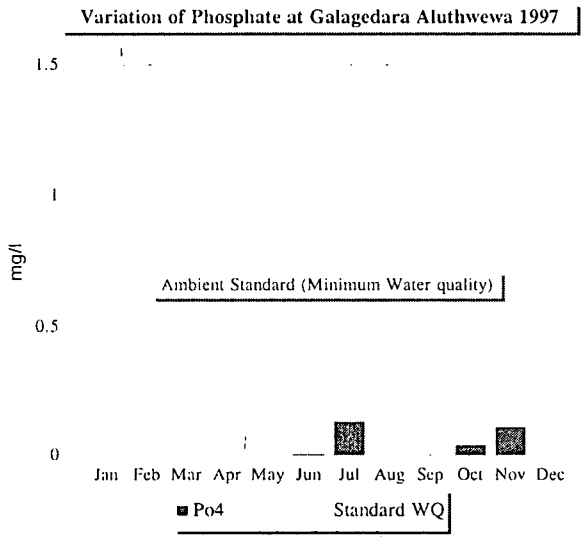


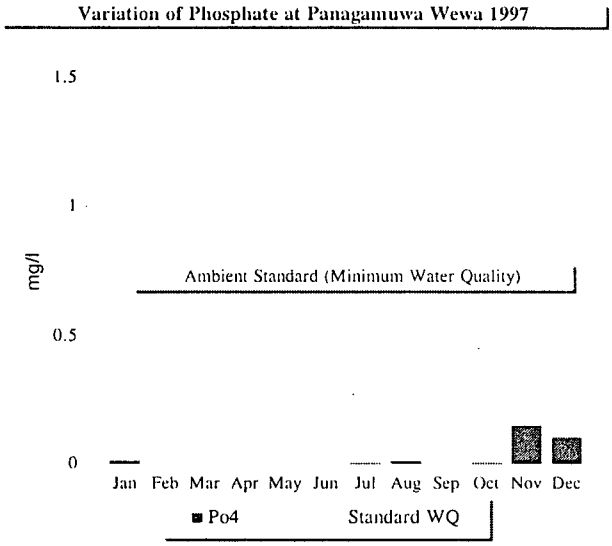
Variation of Phosphate at Andara Wewa 1997

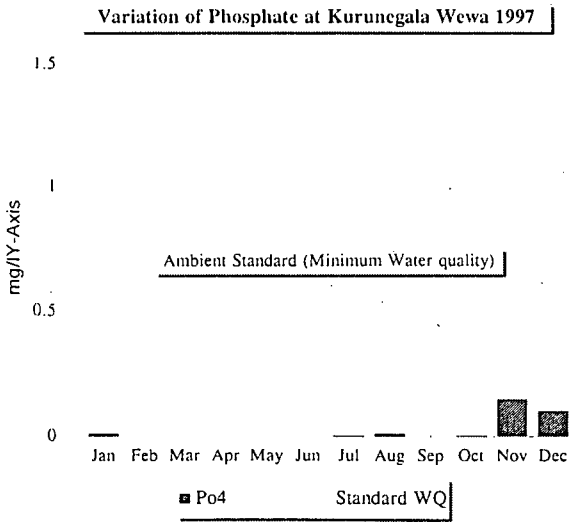


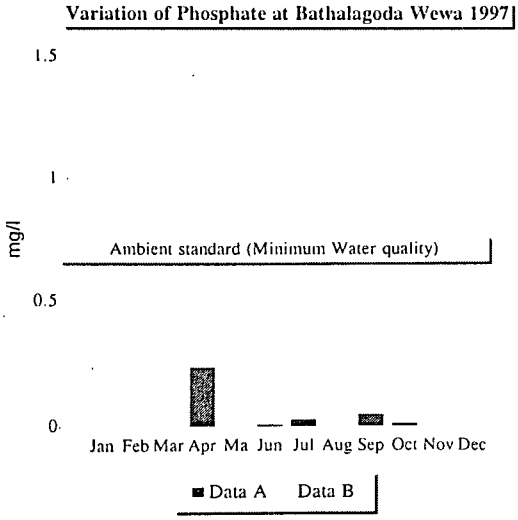

Variation of Phosphate at Maguru Oya (22) 1997
1.5
1
0.5
0
mg/l
Ambient Standard (Minimum Water Quality)
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Po4
Standard WQ


Variation of Phosphate at Daduru Oya (21) 1997
1.5
1
0.5
0
mg/l
Ambiant standard (Minimum Water Quality)
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Po4
Standard WQ


Variation of Phosphate at Galagedara Aluthwewa 1997
1.5
1
0.5
0
mg/l
Ambient Standard (Minimum Water quality)
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Po4
Standard WQ


Variation of Phosphate at Panagamuwa Wewa 1997
1.5
1
0.5
0
mg/l
Ambient Standard (Minimum Water Quality)
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Po4
Standard WQ


Variation of Phosphate at Kurunegala Wewa 1997
1.5
1
0.5
0
mg/lY-Axis
Ambient Standard (Minimum Water quality)
Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec
Po4
Standard WQ


Variation of Phosphate at Bathalagoda Wewa 1997
1.5
1
0.5
0
mg/l
Ambient standard (Minimum Water quality)
Jan Feb Mar Apr Ma Jun Jul Aug Sep Oct Nov Dec
Data A
Data B

Annexure XII

Electrical Conductivity levels of Surface Water in North Western Province during 1995 -1997.

Electrical Conductivity at Tanks & Rivers of NWP in 1995 & 1996

EC - mS/cm

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.45	0.48			0.51	0.37	0.39	0.40	0.46	0.51	0.49	0.23	0.22
EC 1996	0.23					0.33		0.38	0.43	0.291	0.29	0.32	0.32
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.23	0.26			0.34	0.29	0.31	0.34	0.43	0.49	0.47	0.12	0.14
EC 1996	0.14					0.14		0.17	0.18	0.12	0.53	0.14	0.16
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.05	0.10			0.13	0.10	0.10	0.12	0.17	0.37	Dry	0.07	0.07
EC 1996	0.07					0.06		0.09	0.1	0.06	0.06	0.07	0.07
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.11	0.11			0.16	0.07	0.07	0.09	0.12	0.18	0.15	0.05	0.05
EC 1996	0.05					0.07		0.31	0.38	0.28	0.18	0.23	0.27
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.41	0.42			0.72	0.17	0.19	2.12	0.35	0.47	0.57	0.13	0.13
Standard	0.15					0.12		0.17	0.23	0.08	0.09	0.09	0.09
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.46	0.47			0.60	0.35	0.39	0.42	0.57	0.65	0.77	0.07	0.35
EC 1996	0.39					0.03		0.09	0.153	0.04	0.04	0.04	0.04
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.20	0.21			0.21	0.17	0.18	0.17	0.20	0.31	0.14	0.16	0.21
EC 1996	0.29					0.26		0.27	0.331	0.18	0.08	0.22	0.23
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.21	0.15			0.22	0.23	0.24	0.23	0.16	0.24	0.12	0.18	0.24
EC 1996	0.28					0.35		0.3	0.31	0.162	0.06	0.16	0.21
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.06	0.07			0.08	0.08	0.12	0.10	0.16	0.31	0.08	0.06	0.06
EC 1996	Dry					0.08		Dry			0.057	0.081	0.08
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.25	0.22			0.30	0.16	0.18	0.23	0.29	0.31	0.18	0.13	0.21
EC 1996	0.27					0.18		2.1	0.3	0.2	0.132	0.208	0.21
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.14	0.14			0.15	0.12	0.12	0.12	0.13	0.14	0.12	0.12	0.12
EC 1996	0.13					0.16		0.17	0.17	0.18	0.14	0.15	0.16
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.17	0.17			0.17	0.13	0.15	0.15	0.18	0.19	0.14	0.12	0.14
EC 1996	0.15					0.17			0.109	0.15	0.14	0.14	0.16
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.17	0.16			0.13	0.16	0.14	0.15	0.13	0.16	0.12	0.13	0.16
EC 1996	0.15					0.2		0.2	0.18	0.15		0.17	0.17
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.16	0.12			0.15	0.12	0.11	0.13	0.11	0.13	0.12	0.12	0.13
EC 1996	0.12					0.19		0.19	0.16	0.14		0.23	0.13
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.19	0.19			0.20	0.18	0.20	0.20	0.20	0.19	0.15	0.17	0.18
EC 1996	0.19					0.23		0.22	0.196	0.18		0.14	0.20
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

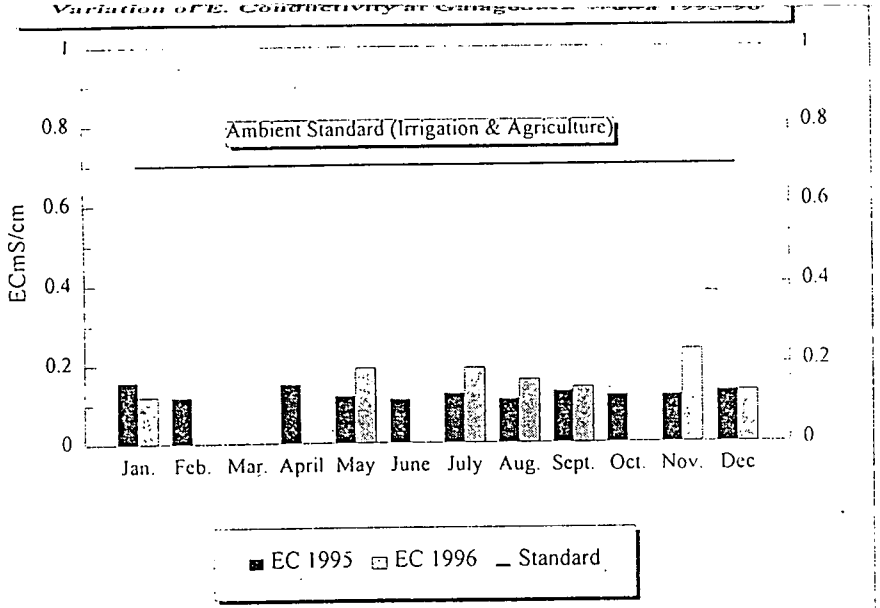
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.23	0.26			0.27	0.22	0.24	0.26	0.30	0.31	0.24	0.17	0.41
EC 1996	0.23					0.25		0.28	0.4	0.23		0.22	0.22
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

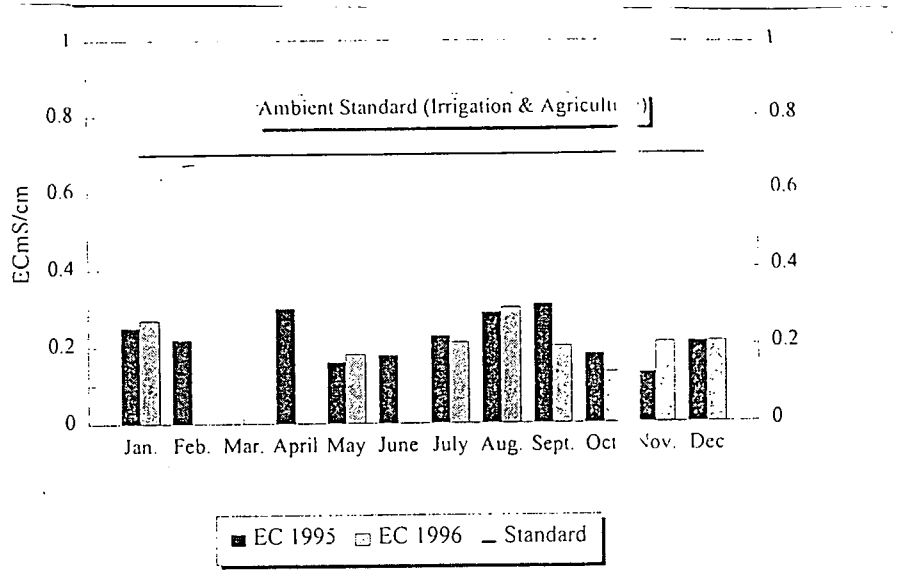
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.21	0.21			0.23	0.20	0.22	0.24	0.25	0.28	0.19	0.17	0.20
EC 1996	0.2					0.26		0.28		0.25		0.16	0.23
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

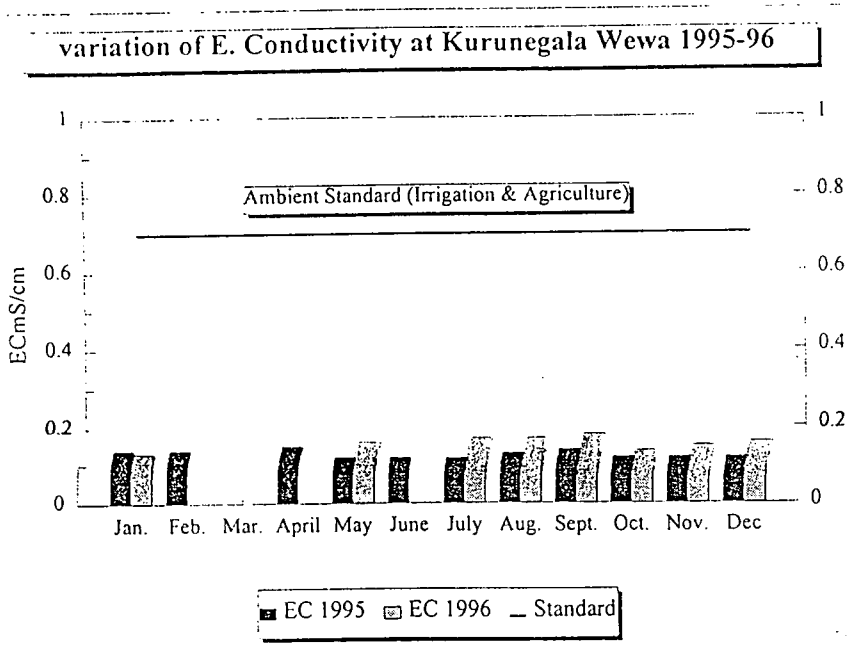
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.19	0.26				0.14	0.16	0.17	0.22		0.16	0.11	0.12
EC 1996	0.13					0.14		0.19	Dry	0.26		0.158	0.13
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

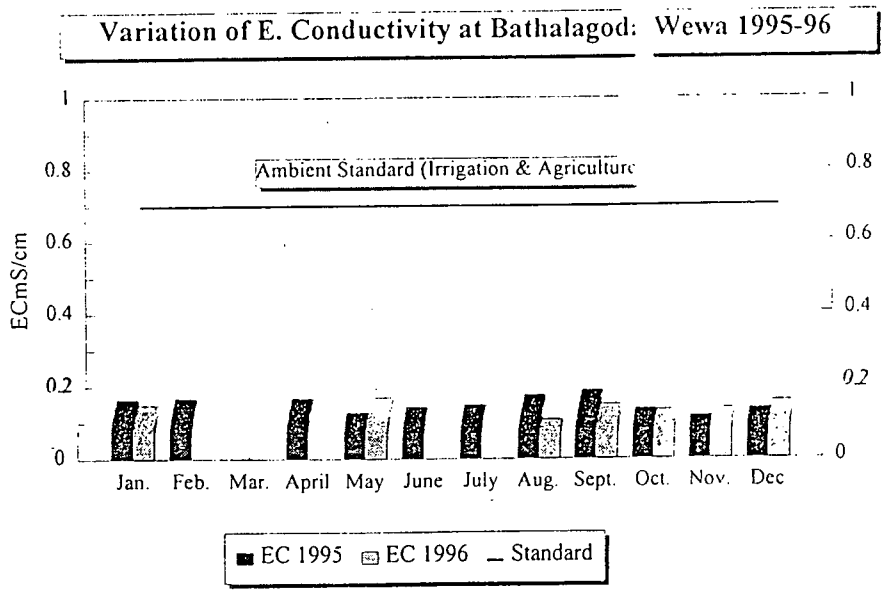
	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.32	0.32			0.36	0.32	0.34	0.37	0.39	0.34	0.37	0.26	0.26
EC 1996	0.29					0.37			0.42	0.38			0.31
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec
EC 1995	0.12					0.27		0.25	0.232	0.13		0.18	0.16
EC 1996	0.19	0.16			0.16	0.15	0.13	0.15	0.15	0.13	0.12	0.14	0.15
Standard	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7

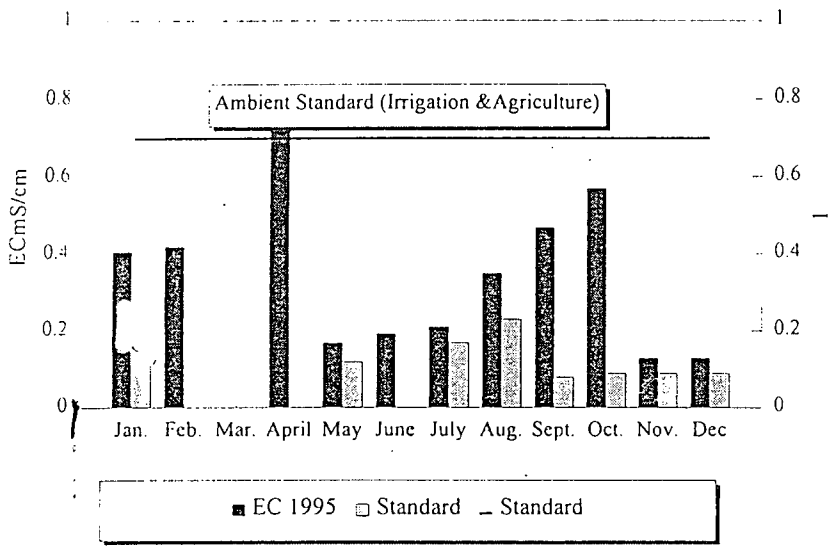

Ambient Standard (Irrigation & Agriculture)
ECmS/cm
0
0.2
0.4
0.6
0.8
1
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec
EC 1995
EC 1996
Standard


Ambient Standard (Irrigation & Agricultu
ECmS/cm
0
0.2
0.4
0.6
0.8
1
Jan. Feb. Mar. April May June July Aug. Sept. Oct Nov. Dec
EC 1995
EC 1996
Standard

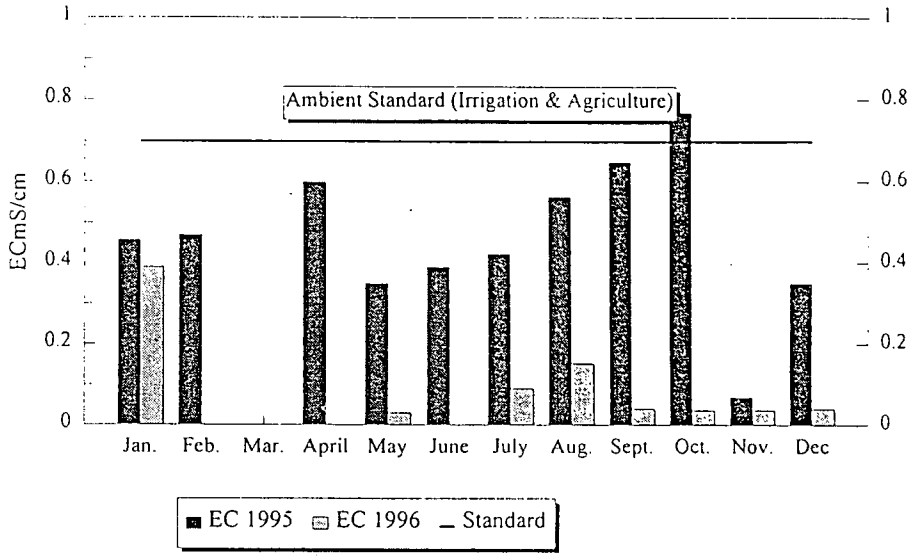

variation of E. Conductivity at Kurunegala Wewa 1995-96
Ambient Standard (Irrigation & Agriculture)
ECmS/cm
0
0.2
0.4
0.6
0.8
1
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec
EC 1995
EC 1996
Standard


Variation of E. Conductivity at Bathalagod: Wewa 1995-96
Ambient Standard (Irrigation & Agriculture
ECmS/cm
0
0.2
0.4
0.6
0.8
1
Jan. Feb. Mar. April May June July Aug. Sept. Oct. Nov. Dec
EC 1995
EC 1996
Standard

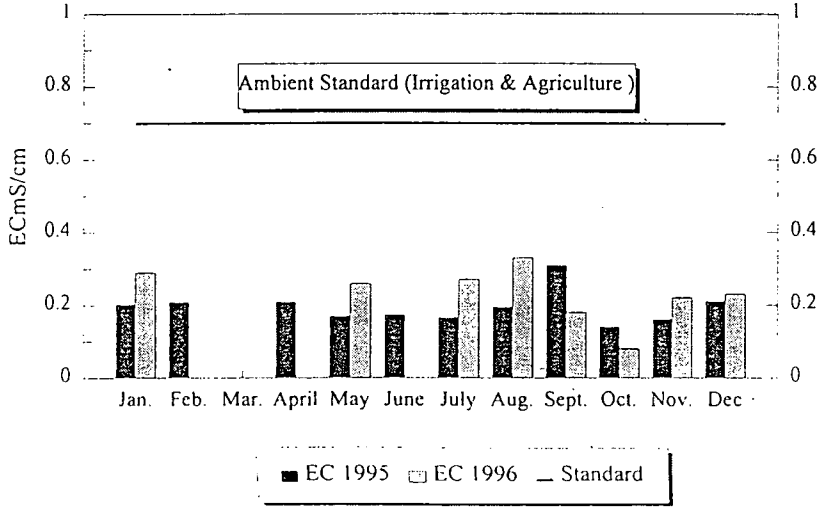
V: iation of E. Conductivity at Sangappali Wewa 1995-96



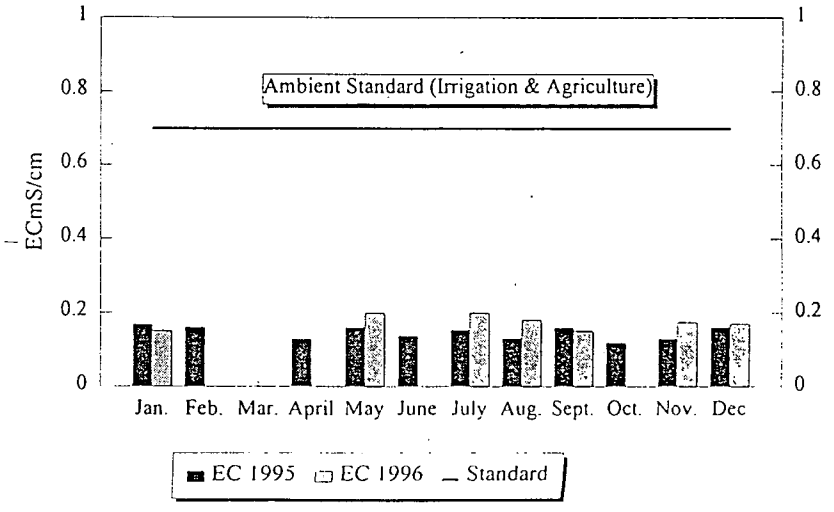
Variation of E. Conductivity at Andara Wewa 1995-96



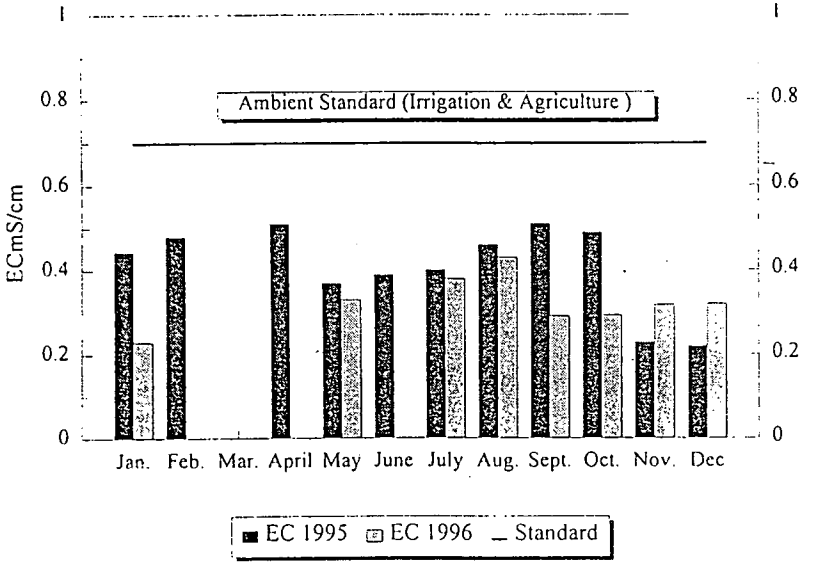
Variation of E. Conductivity at Maguru Oya 1995-96



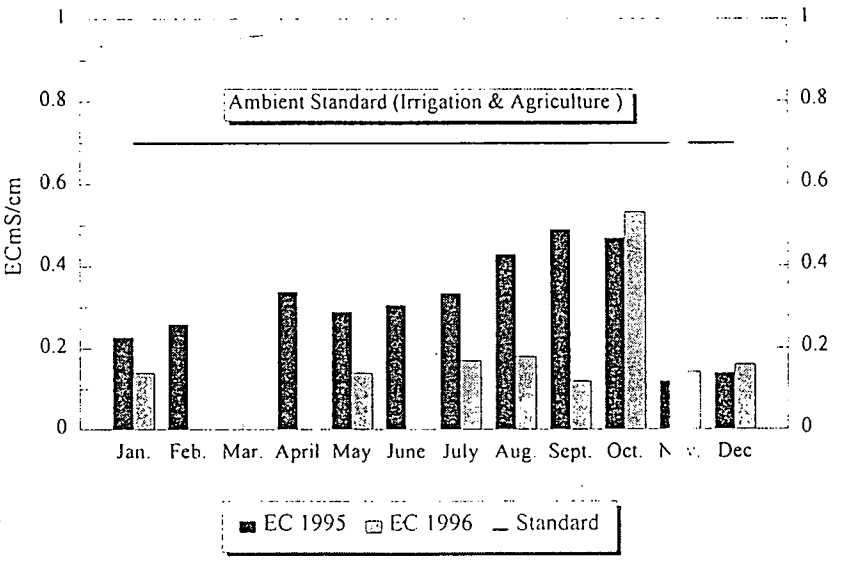
Variation of E. Conductivity at Daduru Oya 1995-96



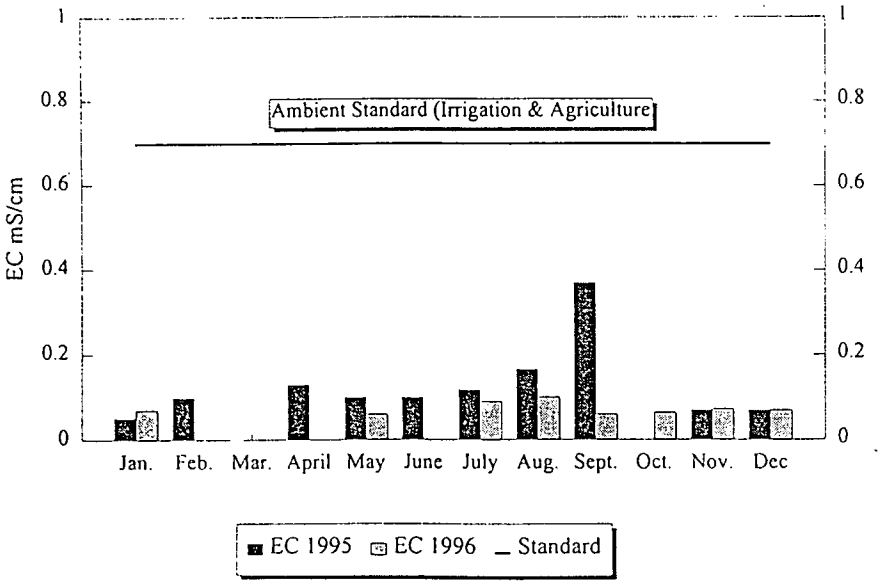
Variation of E. Conductivity at Atthragalle Wewa 1995-96



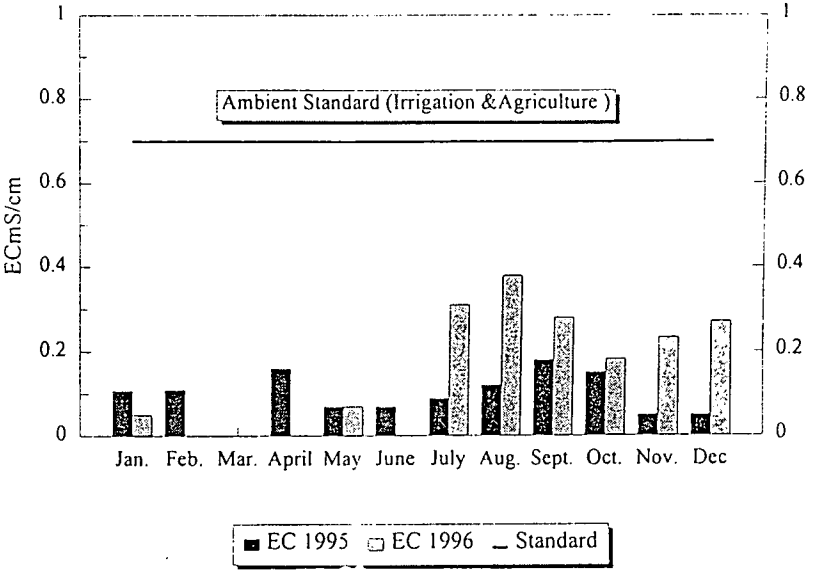
Variation of E. Conductivity at Ahatu Wewa 1995-96



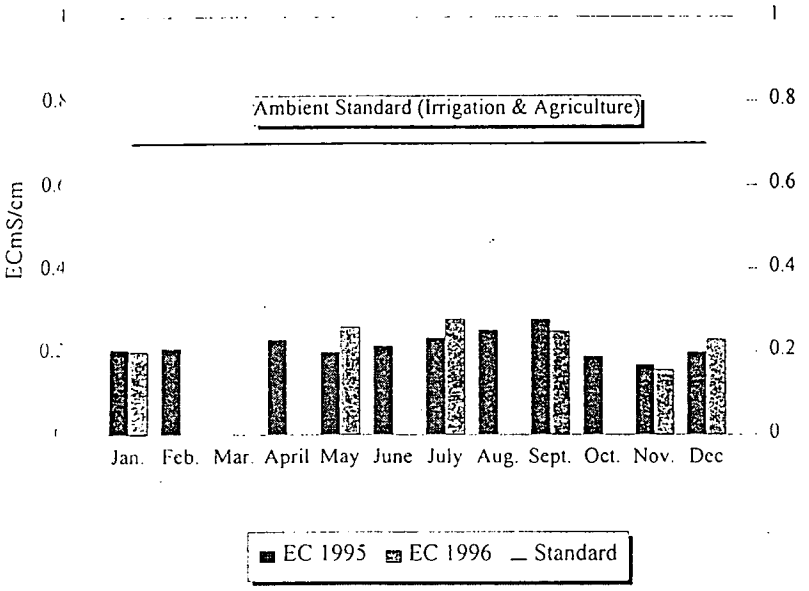
Variation of E. Conductivity at Hiddawa Wewa 1995-96



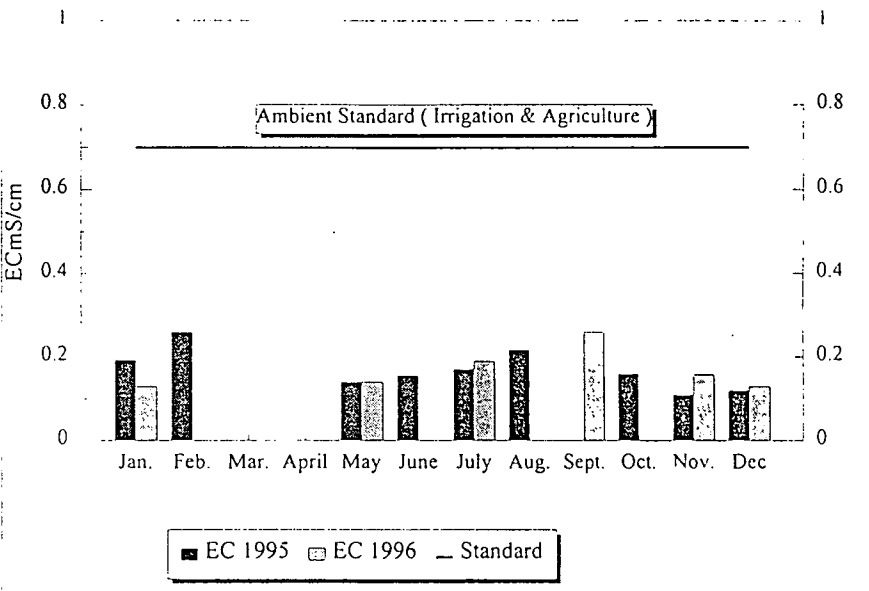
Variation of E. Conductivity at Berithamannaw: Wewa 1995-96



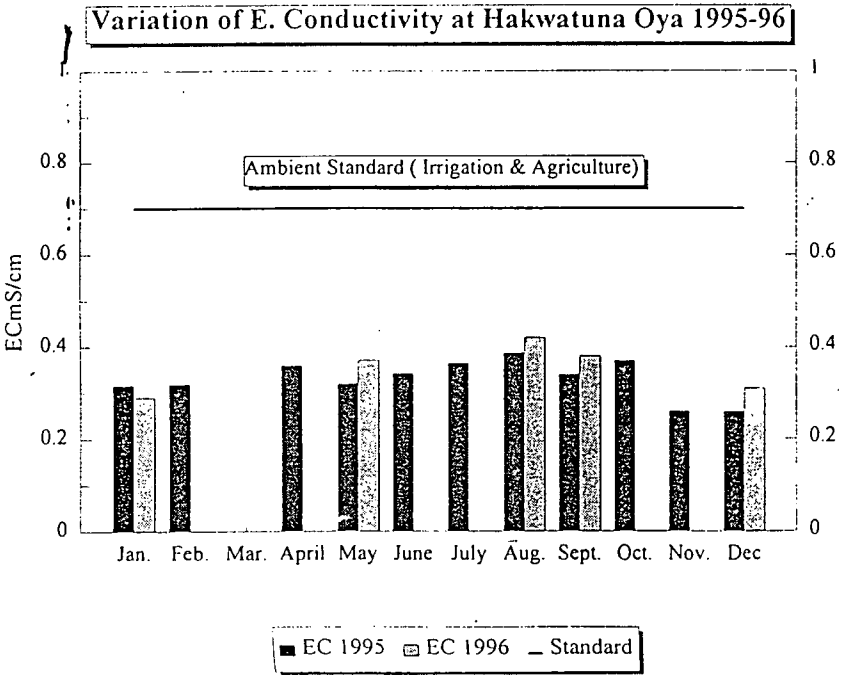
ariation of E. Conductivity at Kimbulwana Oya !995- 96



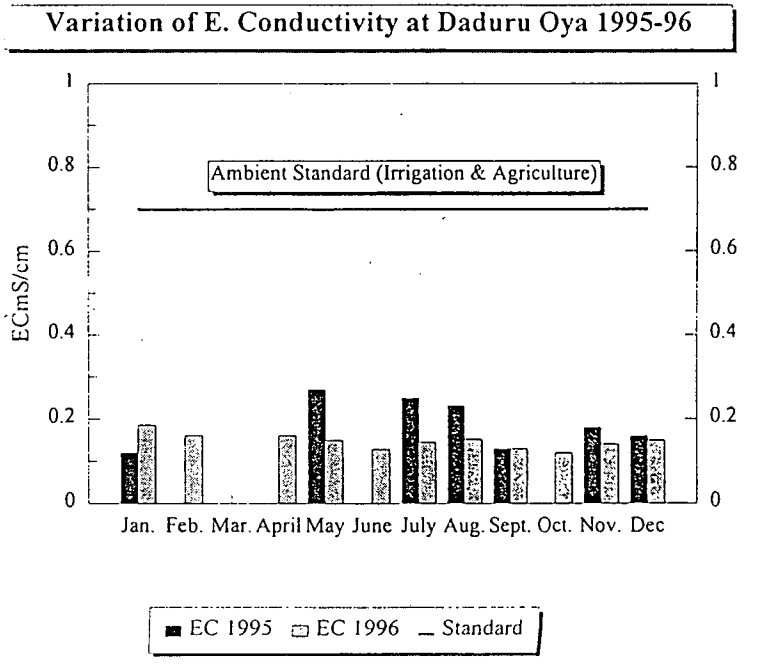
Variation of E. Conductivity at Maddeketiya !995-96



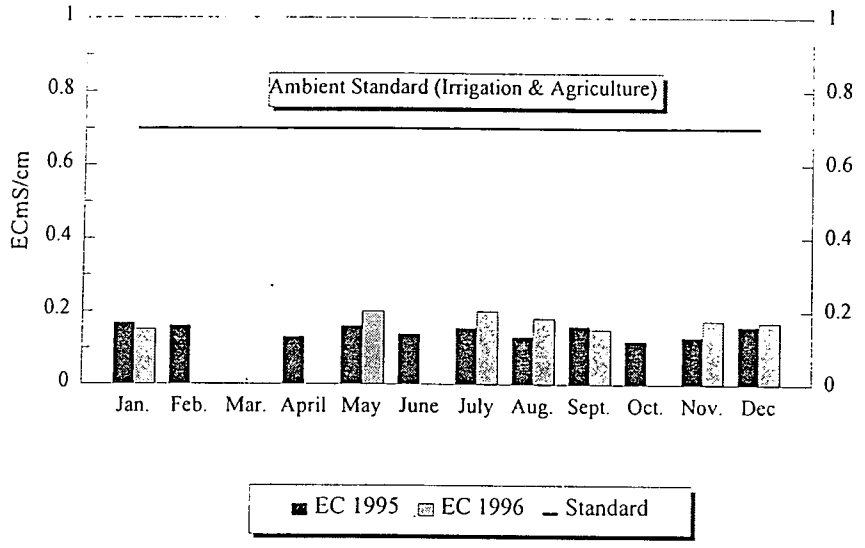
Variation of E. Conductivity at Hakwatuna Oya 1995-96



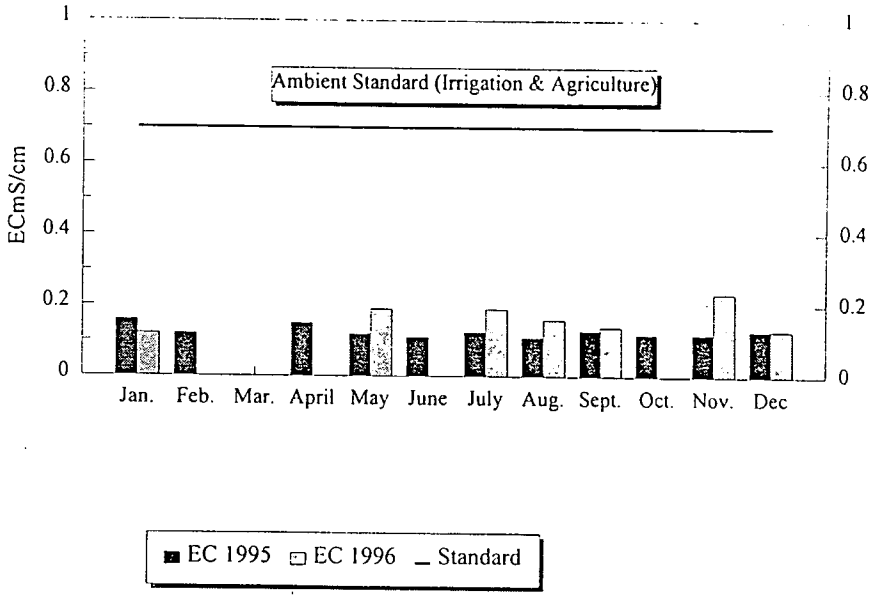
Variation of E. Conductivity at Daduru Oya 1995-96



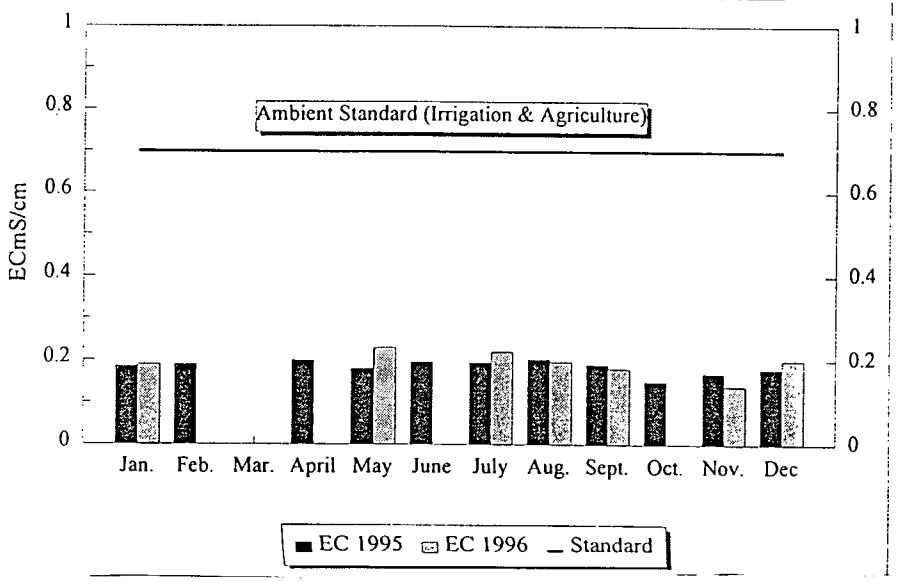
Variation of E. Conductivity at Daduru Oya 1995-96



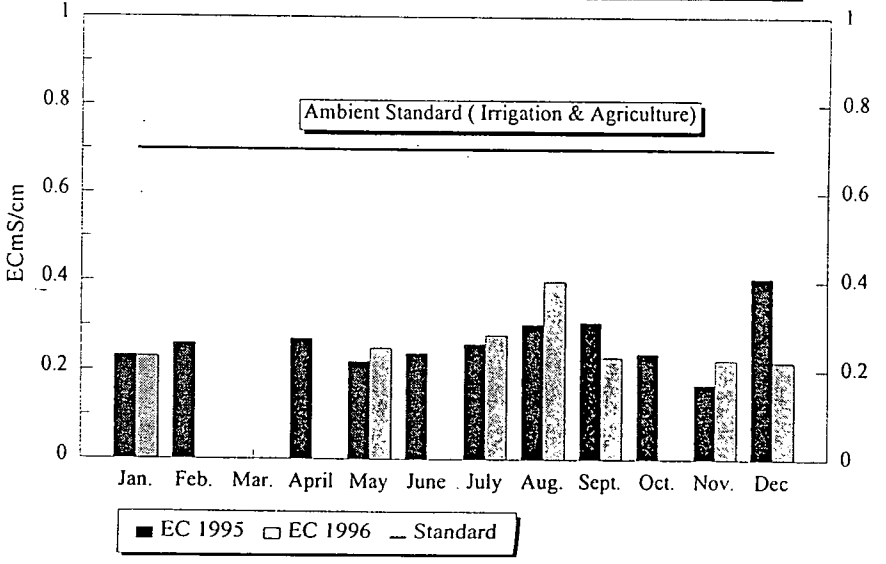
Variation of E. Conductivity at Kospothu Oya !995-96



Variation of E. Conductivity at Kuda Oya



Variation of E. Conductivity at Kimbulwana Oya !995-96

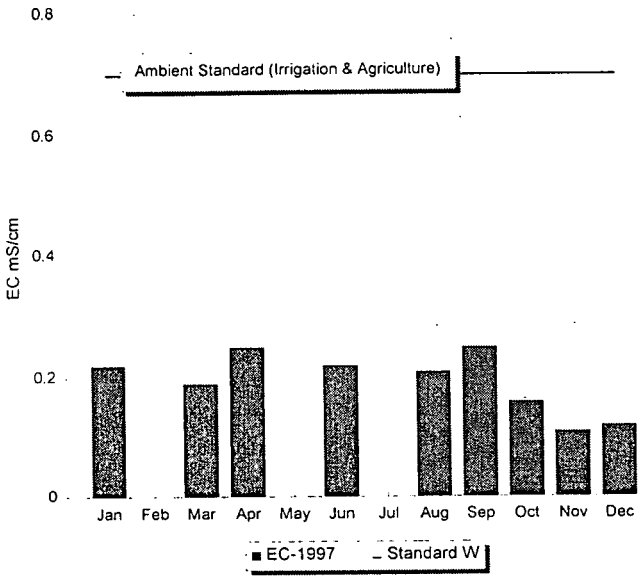


WATER QUALITY MONITORING IN TANKS IN NWP - YEAR 1997
Elecrical Conductivity - 97

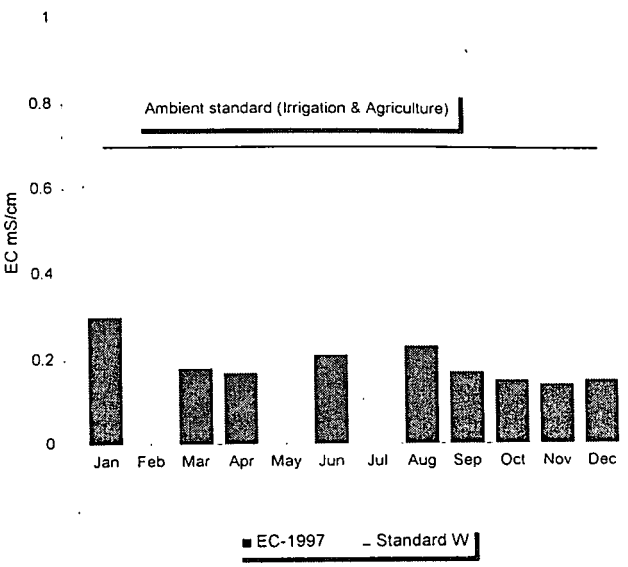
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Attharagalle Wewa	EC- 1997	0.36	0	0.43	0.51	0	0.41	0.42	0.5	0.65	0.63	0.48	0.24	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Ahatu Wewa	EC-1997	0.24	-	0.41	-	-	0.32	0.33	0.43	-	-	0.21	0.19	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hiddawa Wewa	EC-1997	0.08	-	-	-	-	-	-	-	-	-	0.06	0.08	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Berithamannawa wewa	EC-1997	0.35	-	0.42	0.42	-	0.44	0.6	0.8	0.9	1.00	0.18	0.38	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Sangappali wewa	EC-1997	0.1	-	0.7	0.11	-	0.13	0.15	0.2	0.57	0.50	0.05	0.15	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Andara Wewa	EC-1997	0.05	-	0.07	0.13	-	0.06	0.9	0.07	-	-	-	0.08	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Maguru Oya (22)	EC-1997	0.28	-	0.31	-	-	0.23	0.25	0.2	0.28	0.13	0.06	0.2	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Daduru Oya (21)	EC-1997	0.3	-	-	-	-	0.23	0.29	0.29	0.29	0.13	0.11	0.23	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Galagedara Aluthwewa	EC-1997	0	0	0.00	0.00	0	0.08	0.08	0	0	0.10	0.06	0.18	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Panagamuwa wewa	EC-1997	0.23	-	0.25	-	-	0.11	0.16	0.21	-	0.20	0.12	0.13	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kurunegala Wewa	EC-1997	0.16	-	0.12	0.15	-	0.14	0.14	0.15	0.18	0.15	0.14	0.12	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Bathalagoda Wewa	EC-1997	0.18	-	0.22	0.32	-	0.16	0.18	0.19	0.2	0.16	0.14	0.13	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Daduru Oya (5)	EC-1997	0.22	-	0.19	0.25	-	0.22	0.19	0.21	0.25	0.16	0.11	0.12	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Kospothu Oya	EC-1997	0.3	-	0.18	0.17	-	0.21	0.13	0.23	0.17	0.15	0.14	0.15	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
kuda Oya	EC-1997	0.17	-	0.22	-	-	0.23	0.23	0.18	0.25	0.22	0.14	0.22	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
kibulwana Oya (Spill Sid	EC-1997	0	0	0	0.35	0	0.22	0.25	0.26	0.4	0.25	0.15	0.2	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
kibulwana Oya (Anicat)	EC-1997	0	0	0.26	0.35	0	0.20	0.27	0.28	0.4	0.26	0.16	-	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Maddeketiya wewa	EC-1997	0	0	0.23	0.17	0	0.14	0.15	0.16	0.19	0.12	0.10	0.22	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Hakwatuna Oya	EC-1997	0	0	0.26	0.45	0	0.40	0.41	0	0.48	0	0.36	0.09	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	
		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
Daduru Oya (1)	EC-1997	0	0	0.21	0	0	0.23	0.15	0.21	0.23	0.18	0.11	0.17	
	Standard W	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	0.7	

Annexure - 15 - b

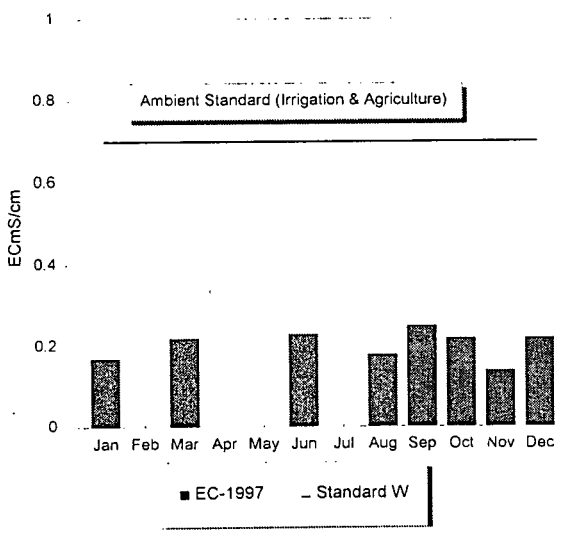
Variation of E.Conductivity at Daduru Oya (05) 1997



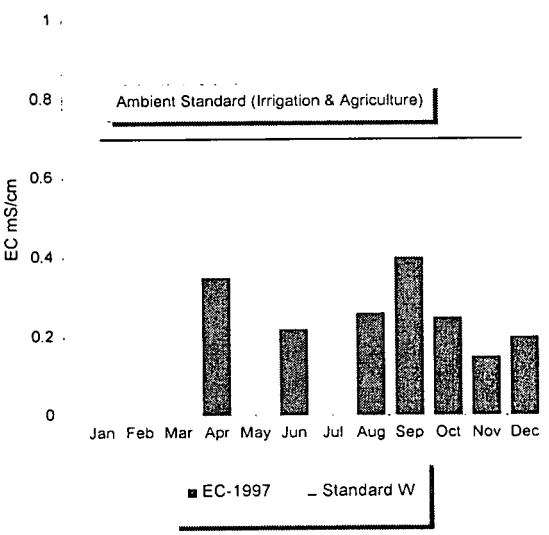
Variation of E. Conductivity at Kospothu Oya 1997



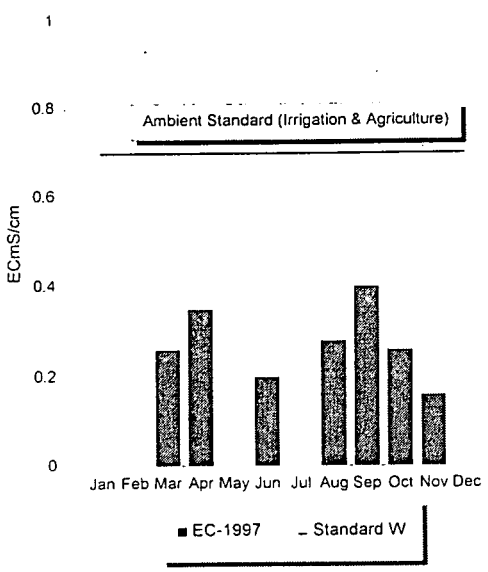
Variation of E. conductivity at Kuda Oya 1997



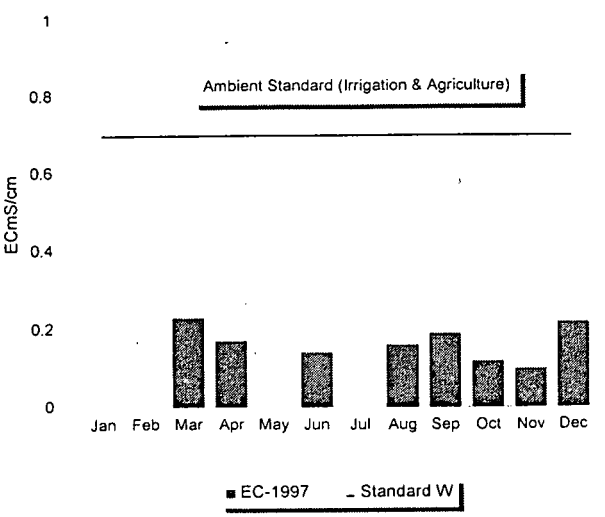
Variation of E. Conductivity at Kimbulwana Oya (Spill Side) 1



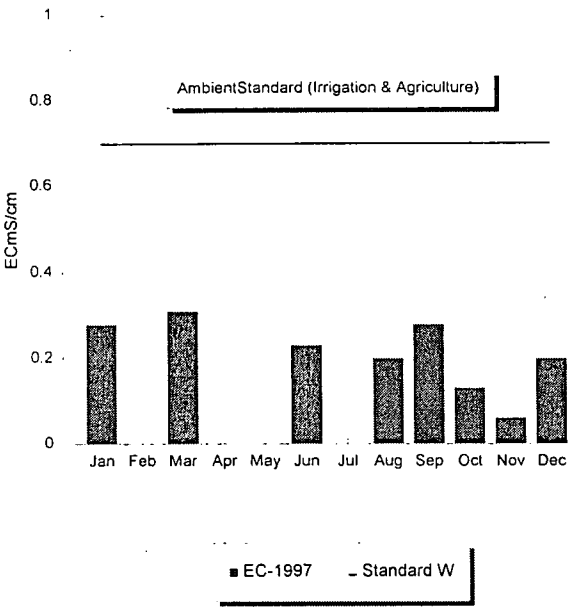
Variation Of E. Conductivity at Kimbulwana Oya(Anicut)1997



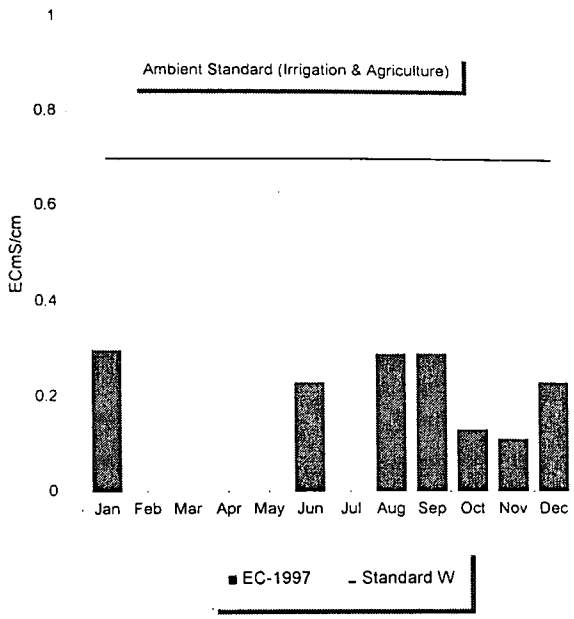
Variation of E.Conductivity at Maddeketiya Wewa 1997



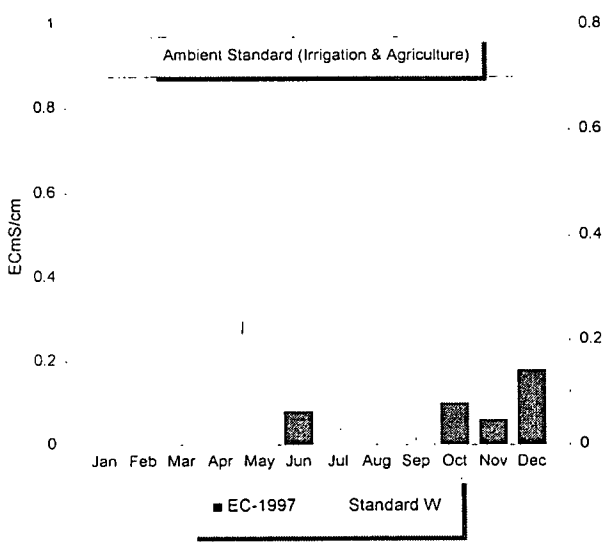
Variation of E. Conductivity at Maguru Oya 1997



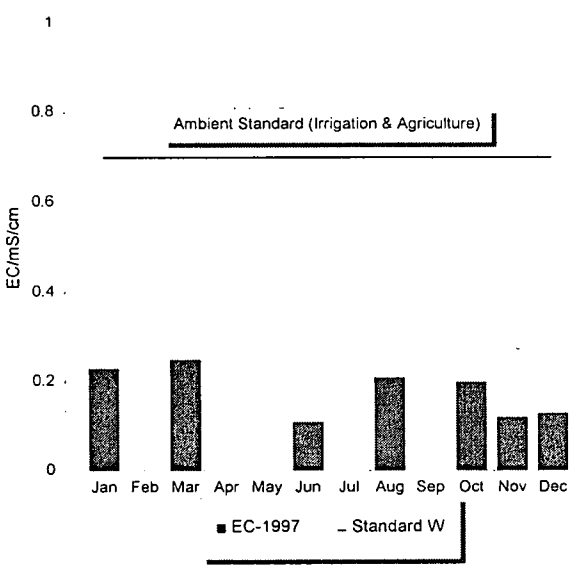
Variation of E. Conductivity at Daduru Oya 1997



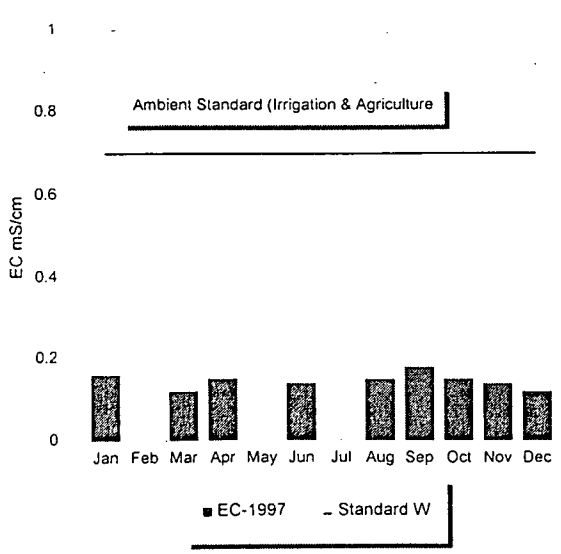
Variation of E. conductivity at Galagedara Wewa 1997



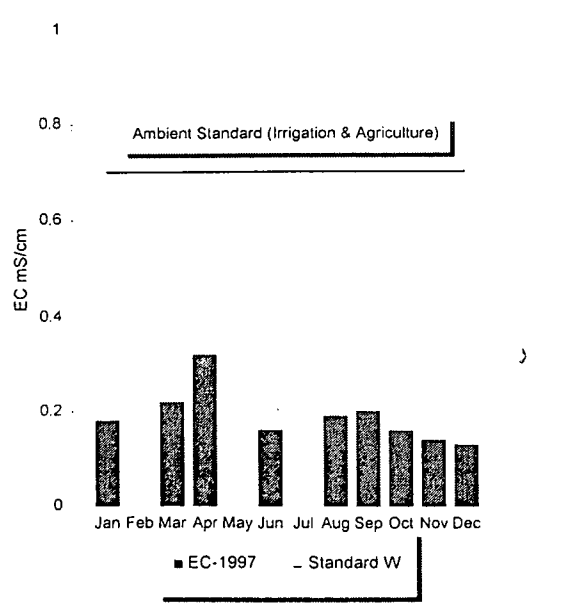
Variation of Electrical Conductivity at Panagamuwa Wewa 1998



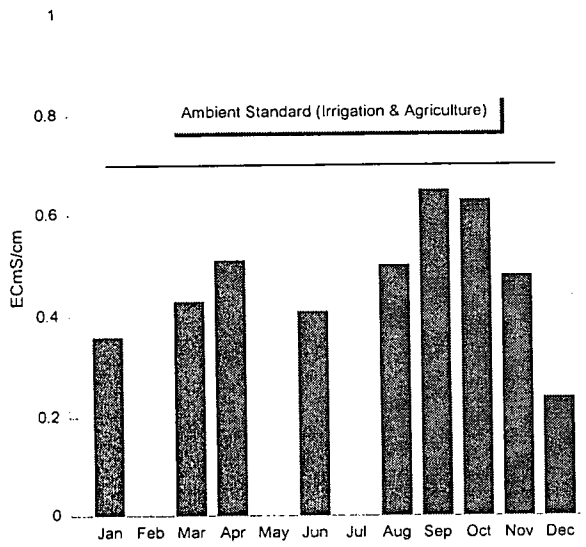
Variation of Electrical Conductivity at Kurunegala Wewa 1997



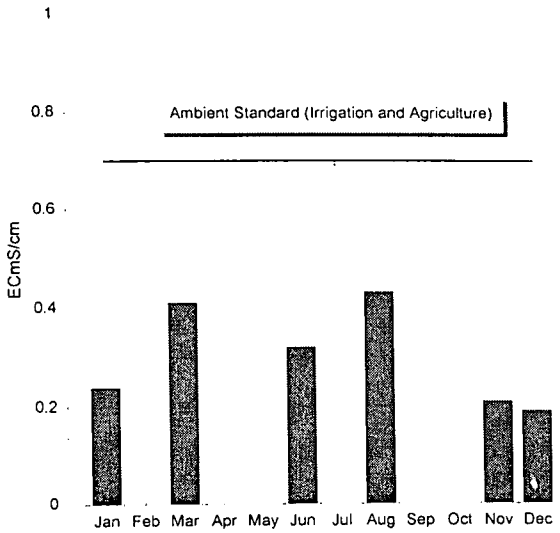
Variation of E.Conductivity at Bathalagoda Wewa 1997



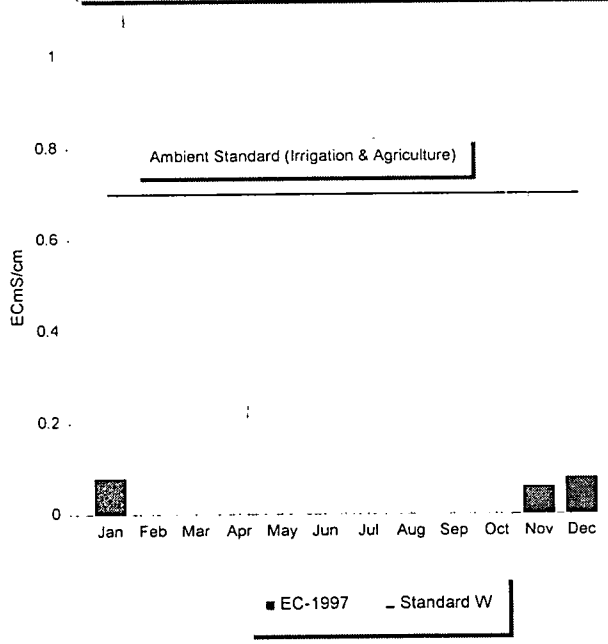
Variation of E. Conductivity at Attharagalle Wewa 1997



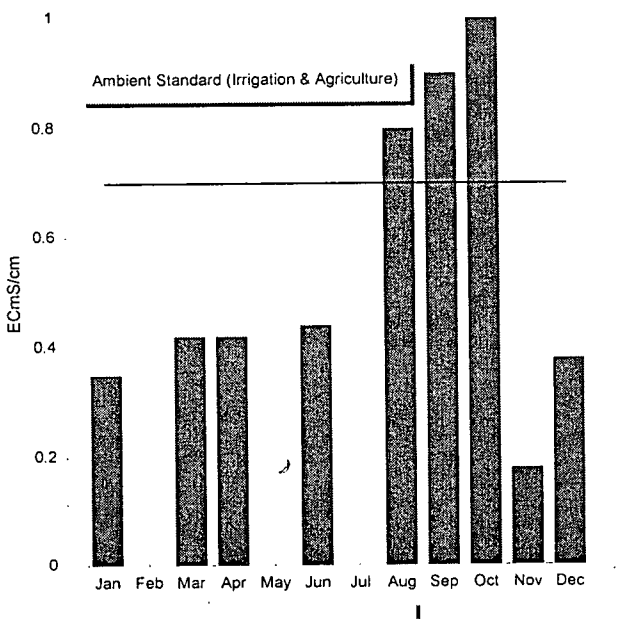
Variation of E. Conductivity at Ahatu Wewa 1997



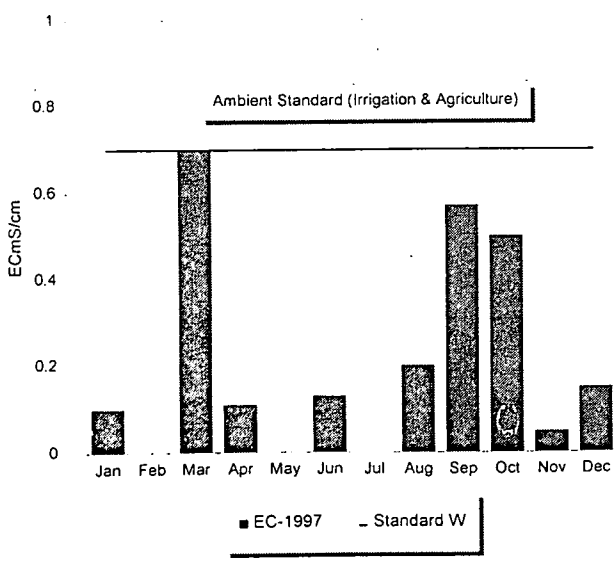
Variation of E. Conductivity at Hiddawa Wewa 1997



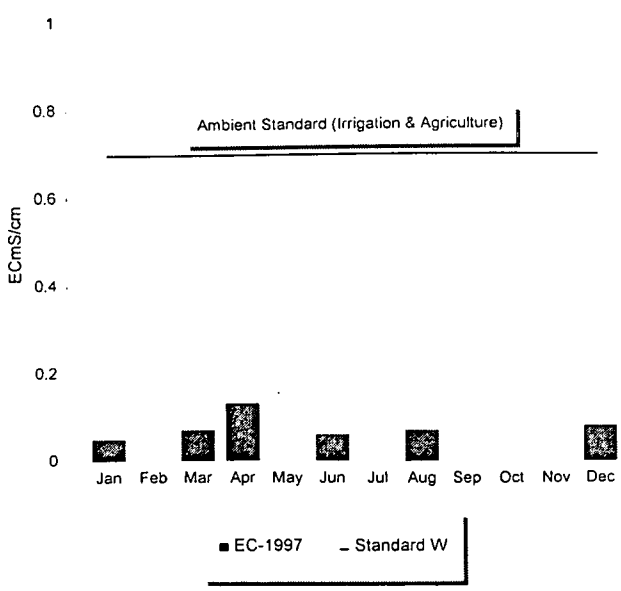
Variation of E. Conductivity at Berithamannawa Wewa 1997



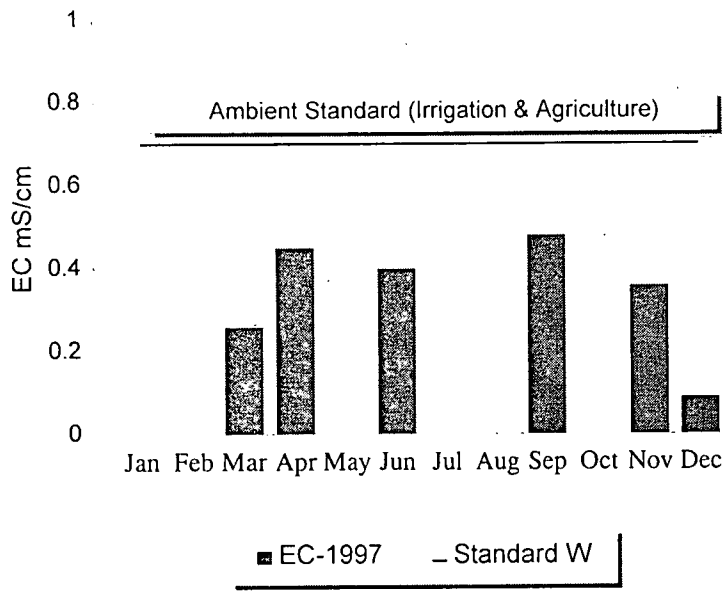
Variation of E. Conductivity at Sangappali Wewa 1997



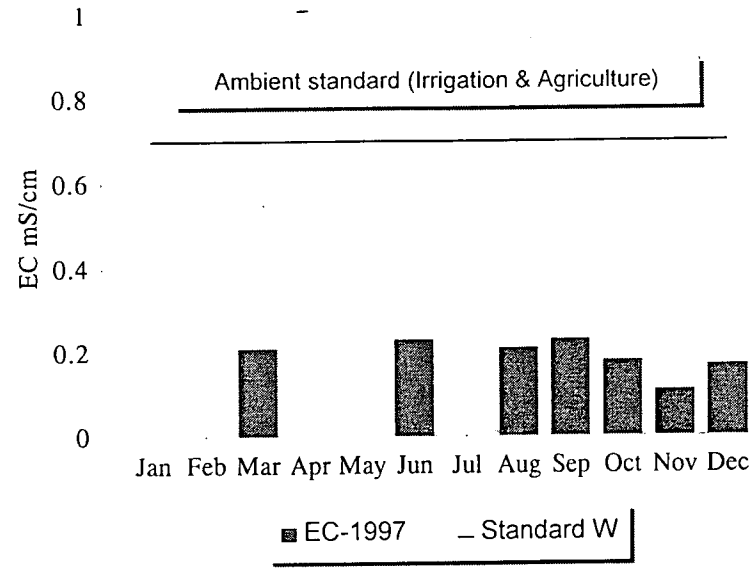
Variation of E.Conductivity at Andara Wewa 1997



Variation of E.Conductivity at Hakwatuna Oya Wewa



Variation E. Conductivity at Daduru Oya (1) 1997



ANNEXURE XIII

PESTICIDES

1. Alachlor
2. Carbofuran
3. Captan
4. Chlorpyrifos
5. Chlorothalonil
6. Dimethoate
7. Diazinon
8. Endosulfan
9. Fenthion
10. Fenitrothion
11. Malathion
12. Monocrotophos
13. Methamidaphos
14. Metalaxyl
15. Oxydemeton Methyl
16. Primiphos Methyl
17. Profenofos
18. Propanil
19. Quinalphos

Annexure XIV

Analysis of Ground Water for Bacteriological Quality

Analysis of Ground Water in Kalpitiya Area for Bacteriological Quality

Sampling Point	Date of Sampling	Total Bacterial "Count per ml"	Total Coliform count per 100 ml	E.coli
1. Mr. Mervin Bopearachchi Daluwa , Mampuri	10.07.97 02.10.97	2.8×10^4 9.0×10^5	170 80	present present
2. Mahathing Seemathuduwa, Daluwa	10.07.97 02.10.97	4.7×10^4 3×10^2	550 Nil	absent absent
3. Fishing Company Mampuri Colony	10.07.97 02.10.97	3.9×10^4 5.4×10^4	900 1800+	absent present
4. Mr. A Basil Mampuri Colony	10.07.97 02.10.97	1.5×10^4 1.5×10^5	30 130+	absent present
5. Mr. M Wijenayake Navakkuliya, Norochcholai	10.07.97 02.10.97	1.9×10^3 2.5×10^5	1600 1800+	present present
6. Domestic well Mr. S Antony Roberts	24.07.97 16.10.97	3.3×10^4 5.6×10^3	1600 1800+	present present
7. NARA Well -washing only	24.07.97 16.10.97	1.3×10^5 1.3×10^5	1800+ 900	present present
8. Agro well-Near church Kandakudawa	24.07.97 16.10.97	2.6×10^5 9.5×10^4	1800+ 1800+	present present
9. Agro well - chigali	24.07.97 16.10.97	1.2×10^3 1.2×10^3	1700 1700	absent present
10. Rizkhan Mills - Alankuda	24.07.97 16.10.97	1.0×10^3 2.4×10^4	1800+ 1800+	present present

Analysis of Ground Water in Kurunegala Area for Bacteriological Quality

Sampling Point	Date of Sampling	Total Bacterial "Count per ml"	Total Coliform count per 100 ml	E.coli
1. Jayakodi Vidyalaya, Muruthange	08.06.1997 30.11.1997	2.3×10^3 4.2×10^3	1800^+ 250	present
2. Mr. S M B Thilakaratne, Pangamuwa,Dummalasooriya	08.06.1997 30.11.1997	1.9×10^3 5.0×10^3	275 550	present
3. Mr. W A Fernando, Walaswewa	08.06.1997 30.11.1997	2.0×10^4 4.9×10^3	1800^+ 1800^+	present
4. Maha Viddyalaya, Nawana	08.06.1997 30.11.1997	6.7×10^2 2.4×10^3	1800^+ 1600^+	present
5. Mr: K Somasiri, Galagamuwa	08.06.1997 30.11.1997	5.5×10^2 9.3×10^3	350 350	present
6. Bodhirukkaramaya, Minuwangate	07.08.1997 06.11.1997	2.1×10^4 9.4×10^3	1800 1800^+	present
7. Mudalindaramaya, Rangama, Welkawa	07.08.1997 06.11.1997	1.2×10^3 6.9×10^4	170 1800^+	present
8. Government Dispensary, Makulpotha	07.08.1997 06.11.1997	1.5×10^3 2.6×10^3	1800 1800^+	present
9. Pihimbuwa Temple, Ridigama	07.08.1997 06.11.1997	5.8×10^4 1.0×10^4	1800 1800^+	present
10. Waduragala Viharaya, Col. Road, Waduragala	07.08.1997 06.11.1997	4.8×10^4 1.4×10^4	250 1800^+	present

Analysis of Ground Water in Puttalam Area for Bacteriological Quality

Sampling Point	Date of Sampling	Total Bacterial "Count per ml"	Total Coliform count per 100 ml	E.coli
1. Muslim College - Palaviya	11.09.1997 02.01.1998	4.9×10^4 3.2×10^6	900 250	present absent
2. Sri Sudarmaramaya Sirambiyadiya	11.09.1997 02.01.1998	1.3×10^4 2.8×10^6	1600 1800+	present present
3. Sri Sugathabimbaramaya Katupadiyana, Welpaluwa	11.09.1997 02.01.1998	1.3×10^4 1.6×10^6	425 1600	present present
4. Thonigala Vidyalaya Thonigala	11.09.1997 02.01.1998	5.1×10^5 2.5×10^3	1800+ 1800+	present present
5. Government Hospital Anamaduwa	11.09.1997 02.01.1998	3.7×10^4 3.5×10^3	1600 900	present
6. Mr. A Agnes	18.09.1997 11.12.1997	5.8×10^3 1.6×10^4	500 1600	present
7. Mr. Simon Fernando	18.09.1997 11.12.1997	4.4×10^3 2.3×10^3	1800+ 1800+	present
8. Veternary Resources Board	18.09.1997 11.12.1997	7.9×10^3 1.6×10^3	1800+ 550	present
9. Sub Office	18.09.1997 11.12.1997	7.7×10^3 5.6×10^2	1800+ 900	present
10. Mr. Sarath Yapa	18.09.1997 11.12.1997	5.9×10^3 1.5×10^3	1800+ 1800+	present